MEDICINE SURGERY

INDUSTRIAL HEALTH
OCCUPATIONAL DISEASES
TRAUMATIC, INDUSTRIAL

INDUSTRIAL HYGIENE
INDUSTRIAL MEDICINE
& RAILROAD SURGERY

Industrial Medicine | Volume 13 | FEBRUARY, 1944 | Number 2 | Industrial Medicine

This Month

PSYCHOLOGICAL Elements ..... *Eric A. Cunningham, M.D.* 119
—In the Treatment of Industrial Injuries
PLACING the Physically Handicapped ..... *Howard L. Reed, M.D.* 120
—In Industrial Employment
COMPLAINTS of Women in Industry ..... *W. H. Varney, M.D.* 122
—Their Medical Management
PERIODIC Examinations ..... *L. B. Clinton, M.D.* 124
—Workers in Toxic Chemicals
PERIODIC Examinations ..... *George McL. Waldie, M.D.* 126
—Workers in Non-Toxic Chemicals
BETTER Nutrition for Plant Personnel ..... *C. W. Hoffman, M.D.* 128
—To What Extent Can the Medical Department Contribute
NON-OCCUPATIONAL Injury and Illness. *Alexander McCausland, M.D.* 129
—Extent of Their Care
THE PHYSICIAN'S Responsibility ..... *T. J. Nereim, M.D.* 130
—In Illness and Injury of Uncertain Origin
SUSPECTED Occupational Disease ..... *J. G. Townsend, M.D.* 132
—Approaches to Adequate Study
PRECISION Necessitates Fitness ..... *H. Glenn Gardiner, M.D.* 136
—A Medical and Surgical Service, and a Vision Program
(With C. O. *Sappington, M.D., Dr.P.H.*)
CARBON Disulphide ..... *H. P. Quadland* 143
—Part 4 of a Literature Study of Occupational Injuries
CENTRAL STATES Society of Industrial Medicine and Surgery 150
—Mid-Winter Scientific Session
RECORDS—The "Seeing Eye" of Industrial Medicine 154
—Explanatory Notes
EDITORIAL 156
GROUP Feeding in Small Plants ..... *Felix J. Underwood, M.D.* 160
—Observations on Why and How
(With *Mary Stansel*, and *Wayne L. Ritter, M.D.*)
POSTWAR Planning ..... *H. W. Prentis, Jr.* 170
—Some Economic Aspects
CARBON Tetrachloride Poisoning ..... *W. E. Doyle, M.D.* 184
—Epidemic in a Parachute Plant
(With *Charles Baker, M.D.*)
INDUSTRIAL HEALTH and DISEASE:
The General Motors Medical Program ..... *C. D. Selby, M.D.* 194
—For Health and Safety
Aviation Physical Examinations ..... *Ross A. McFarland, Ph.D.* 198
—Current Practices in Selection
INDUSTRIAL Nursing ..... *Zillah T. Pechin, R.N.* 203
—With the Tennessee Valley Authority
INDUSTRIAL Public Health Nursing ..... *Mary G. Devine, R.N.* 204
—In Georgia
SYMPOSIUM—Nurse's Duties and Responsibilities 205
Personal ..... 6 General 14
Health in the Small Plant 16
Comment and Opinion 22
Ten Years Ago in "Industrial Medicine" 46

THERE is a wealth of timely significance in the fine articles from Hercules Powder Company's recent Medical Conference which "lead off" this issue (pages 118-135). This not alone from the fact that the experiences which are so interestingly set forth had their origin in a kind of work peculiarly beset with hazardous possibilities, real and supposed, but more from the understanding and capable manner in which they reflect the fundamental principles of industrial medicine appreciated and applied. Distinctive in subject, and personalized through the author's point of view and method of presentation, nevertheless each paper reflects the common *motif* of superior industrial medicine, superlatively administered. The reason, no doubt, is inherent in DR. CLINTON'S observation (page 125) that "Each man is an individual study, and each type of work is a different clinical problem." This is as good a crystallization of the very warp and woof of industrial medicine as we have seen, and realization of it is the key to successful industrial practice. If these words of DR. CLINTON'S could be burned into the consciousness of *every* physician, it would remind (1) the busy ones in industry that neither employees nor the medical problems they bring can be handled on an assembly line basis, and (2) the also busy ones not in industry that those of their patients who work for a living are doubly individualized in medical possibilities, once for themselves, and again for the kind of work they are doing. Another outstanding characteristic of these papers is their disclosure of detailed knowledge on the part of Hercules' physicians of the actual mechanics of their plant operations, another *sine qua non* of pre-eminence in this field. . . . DR. GARDINER'S medical department, distinguished for its unique and successful vision program, is all too briefly described (page 136)—probably because of the sincerity with which he invites first-hand inspection by "industrial physicians and surgeons, nurses, and personnel and safety directors." His "visual service" alone is worth

INDUSTRIAL MEDICINE, The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery. Entered as second class mail matter August 28, 1941, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879. Published on the fifth of each month by INDUSTRIAL MEDICINE PUBLISHING COMPANY, Chicago. STEPHEN G. HALOS, President; A. D. CLOUD, Publisher; C. O. SAPPINGTON, M.D., DR. P.H., Editor; CHARLES DRUECK, JR., Secretary and Treasurer; STEPHEN G. HALOS, Advertising and Business Manager. PUBLICATION, EDITORIAL and EXECUTIVE Offices: 605 North Michigan Avenue, Chicago, Illinois. Subscription $5.00 per year in the United States; $5.50 per year in Canada; $6.00 per year in other countries. Single copies 50 cents. Title Registered in United States Patent Office.

Copyright, 1944, by Industrial Medicine Publishing Company, Chicago.

Eastern Representative, H. GORDON HUNTER, 152 West Tenth Street, New York City.

THIS MONTH

Alkalol Company, The 194
Alkalol
Aloe, A. S., Company 42
Universal Operating Table
American Optical Company 187
AO Goggles
American Sterilizer Company 177
Hygeaire Ultraviolet Units
Anacin Company, The 161
Anacin
Anglo-French Laboratories, Inc. 4
Hepvisc
Bard-Parker 13
Formaldehyde Germicide
Becton-Dickinson & Co. 50
B-D Syringes
Bisodol Company, The 185
BiSoDol
Breon, George A., & Company 44
Doxychol
Bristol-Myers Company 21
Toushay
Burdick Corporation, The 159
Burdick Solarium Shower
Camp, S. H., and Company 7
The Nation's Health Education
Cambridge Instrument Co., Inc. 28
All-Electric Electrocardiograph
Carbisulphoil Company 171
Foille—for Burns
Cheseborough Manufacturing Company ... 51
Vaseline Petroleum Jelly
Ciba Pharmaceutical Products, Inc..4th Cover
Nuporals
Cole Chemical Company 10
Caloe Ointment
Crescent Surgical Sales Co., Inc. 39
X-Acto Utility Knife
Crookes Laboratories, Inc. 40
Enzo-Cal
Crookes Laboratories, Inc. 176
Colsargen
Denver Chemical Mfg. Company, The..... 14
Antiphlogistine
Denver Chemical Mfg. Company, The 46
Acetone Test; Galatest
Desitin Chemical Company 26
Desitin Ointment; Desitin Powder
Dixie Cup Company 17
Dixie Cups
Dome Chemicals, Inc. 8
Daxalan
Drug Products 210
Sulfarea Ointment; Sclorea Emulsoid
Du Pont, Company 193
Du Pont Pro-Tek
Effervescent Products, Inc. 18
Acetyl-Vess; Salici-Vess
General Cellulose Co., Inc., The 34
S' Wipe' S
General Electric X-Ray Corporation 157
G-E Photo-Roentgen Unit
Hanovia Chemical & Mfg. Co. 25
Lighthouse Ultra-violet Lamp
Health Cigar Co., Inc. 12
Sano Cigarettes
Holland-Rantos Company, Inc. 27
Koromex Set Complete
Hollings-Smith Co. 173
Nakamo Bell
Hynson, Westcott & Dunning, Inc. 168
Mercurochrome
Ille Electric Corporation 180
Ille Hydromassage
Industrial Medicine Book Company..... 210
"The Mind of the Injured Man"
Iodine Educational Bureau, Inc. 164
Iodine
Irwin, Neisler & Company..... 199
Osmopak
Johnson & Johnson 1
Steri-Pads
Kny-Scheerer Corporation 11
Surgical Instruments
Leeming, Thos., & Co., Inc. 32
Baume Bengué
Leeming, Thos., & Co., Inc. 167
Magmasil
Lily-Tulip 210
Cups and Containers
McLintock, D. C., Co..... 38
"Stick-Pads"
McNeil Laboratories, Inc. .....2nd Cover
Tablets Aspirocal
Medicone Company 47
Rectal Medicone
Merck & Co., Inc. 189
Pyridium
Merrell, The Wm. S., Company 10
Oravax
Merrell, The Wm. S., Company 43
Pan-Concemin Tablets
Merrell, The Wm. S., Company 169
Nethacetin
Milburn Company, The 15
Ply No. 11
Mine Safety Appliances Company 55
Fend
Murine Company, Inc., The 20
Murine
Newskin Company 24
New-Skin
Numotizine, Inc. 30
Nuzine Ointment
Nutrition Research Laboratories 36, 37
Bezon
Nutrition Research Laboratories 48, 49
Ertron
Occy-Crystine Laboratory 16
Occy-Crystine
Patch, The E. L., Company 176
Gadoment
Parke, Davis & Company 5
Gluco-Fedrin with Sulfathiazole
Parker, White & Heyl, Inc. 13
Bard-Parker Germicide
Patterson Screen Division (Du Pont) 31
Patterson Screens
Pelton & Crane Co., The 54
Pelton Autoclave
Picker X-Ray Corporation 2
X-Ray Apparatus
Pineoleum Co., The 22
Pineoleum
Potter Drug & Chemical Corp. 35
Cuticura Soap; Cuticura Ointment
Powers X-Ray Service 196
Rapid Chest X-Rays
Progressive Laboratory Specialties 210
Derma-Tectors
Reed & Carnrick 181
Peptenzyme Digestant
Reynolds, R. J., Tobacco Company 163
Camel Cigarettes
Schering Corporation 175
Estinyl
Schmid, Julius, Inc. 191
Ramses Diaphragm
Searle, G. D., & Co. 183
Floraquin Tablets; Powder
Serutan, Professional Service Div....3rd Cover
Serutan
Sharp & Dohme 9
'Lyovac' Normal Human Plasma
Sharp & Dohme 197
'Riona' Capsules
Squibb, E. R., & Sons 56
Aids to Vitamin Therapy
Stearns, Frederick, & Company 19
Neo-Synephrine Sulfathiazolate
Stepan Chemical Company, The 23
pH6 Skin Cleanser
Tailby-Nason Company 172
Supertah Ointment
Tenex Laboratories, Inc. 38
Tenex Liquid; Tenex Tar Cream
Upjohn 165
Unicap Vitamins
Wallace & Tiernan Products, Inc. 29
Azochloramid Preparations
West Disinfecting Company 195
Lan-O-Kleen
White Laboratories, Inc. 52, 53
White's Sulfathiazole Gum
White Laboratories, Inc. 179
White's Vitamin A & D Ointment
Whittaker Laboratories, Inc. 198
Cooper Creme
Willson Products, Incorporated 160
No. 780 Approved Respirator
Wilmot Castle 45
Sterilizers
Winthrop Chemical Company, Inc. 41
Drugs
Wyeth, John, & Brother 33
Hematinic Plastules

all the time and trouble involved in traveling far to see it. . . . THIS being the publisher's column, we can talk about editors. Their travels and contacts develop many things of minor importance but of great interest, and they receive impressions and arrive at opinions which have little place in formal presentations, although often worth an informal comment. Our editor's last "twelve-month of great going and coming" got him yclept "Dr. Pilgrim," as a result of which he was prevailed upon to begin a column so designated (page 158). If this "Pilgrim's Progress," as it were, should be thought too similar to DR. FISHBEIN'S inimitable and always interesting "Pepys' Diary," it should be remembered that "imitation is the sincerest flattery." This column is "for such as want it." As Dr. Pilgrim says: "For those who desire it not, they may pass it over." . . . "TEN YEARS AGO IN INDUSTRIAL MEDICINE" (page 46) reminds that a well designed, thoroughly equipped and capably staffed industrial medical department is nothing new. DR. FISHER, in his, and hundreds of his colleagues in theirs, were expressing the best in industrial medicine as far back as the early 20's, some long before that. But industrial medicine keeps on being discovered—which, of course, is all to the good, because the more who know about it, however they may learn, the greater the benefits to more people. Strange, though, that there should linger *any* professional reluctance. . . . ST. LOUIS, and May 8-13, are the place and time of the 28th Annual Meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, and the "War Conference on Health and Rehabilitation," in which the Industrial Hygienists and the Industrial Nurses are joining. Probably no one needs to be urged to make reservations early. Nevertheless we *do* urge: "Make Reservations Early." There is a schedule of hotel rates elsewhere in these pages. Write JOHN REINHARDT, Chairman, Syndicate Trust Bldg., St. Louis.

HEED ALARM IN HYPERTENSION with HEPVISC

Soaring blood pressure levels in hypertension are danger signals effectively met with HEPVISC. Safe, prolonged hypotensive action. Headaches and dizziness relieved.

Dosage: 1-2 tablets t. i. d. Sample and formula on request.

ANGLO-FRENCH LABORATORIES, INC. • 75 VARICK ST., NEW YORK 13, N. Y.

NOW linked with MICROCRYSTALLINE SULFATHIAZOLE

For more effective relief of the nasal symptoms accompanying the common cold, sinusitis, and rhinitis, PARKE-DAVIS offers GLUCO-FEDRIN* WITH SULFATHIAZOLE, a new decongestant which reflects the results of modern research in nasal medication . . .

- provides adequate shrinkage of nasal membranes with 1% of ephedrine (as the lactate),
- supplies the antibacterial action of sulfathiazole in minute crystals, the most effective form of the drug for intranasal use,
- pH adjusted to the normal, slightly acid level of nasal mucosa,
- made approximately isotonic with nasal secretions by the inclusion of dextrose,
- suspended in a non-irritating, aqueous base.

GLUCO-FEDRIN WITH SULFATHIAZOLE is a stable, rapidly dispersible suspension which may be applied by spray, applicator, pack, or dropper. It is available in 1-ounce bottles with dropper cap.

PARKE, DAVIS & COMPANY

Detroit, Michigan

*Trade-mark Reg. U. S. Pat. Off.

INDUSTRIAL MEDICAL and RAILWAY SURGICAL ASSOCIATIONS

Industrial Medicine
Reg U S Pat Off.
Official Publication

American Association of Industrial Physicians and Surgeons

THE object of this Association shall be to foster the study and discussion of the problems peculiar to the practice of industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes and results of the medical care of employees, and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for their mutual advancement in the practice of their profession.

Officers

President
HARVEY BARTLE, M.D.,
Pennsylvania Railroad
Philadelphia, Pennsylvania.

President-Elect
FREDERICK W. SLOBE, M.D.,
Automatic Electric Company,
Chicago, Illinois.

First Vice-President
MELVIN N. NEWQUIST, M.D.,
The Texas Company,
New York, N. Y.

Second Vice-President
LOYAL A. SHOUDY, M.D.,
Bethlehem Steel Company,
Bethlehem, Pennsylvania.

Treasurer
EDWARD C. HOLMBLAD, M.D.,
Railway Express Agency,
28 East Jackson Boulevard,
Chicago, Illinois.

Managing Director
EDWARD C. HOLMBLAD,
Railway Express Agency,
28 East Jackson Boulevard,
Chicago, Illinois.

Directors 1942-1944

T. LYLE HAZLETT, M.D.,
Westinghouse Electric & Mfg. Co.,
Pittsburgh, Pennsylvania.

CAREY P. MCCORD, M.D.,
Industrial Health Conservancy
Laboratories, Detroit, Michigan.

HAROLD A. VONACHEN, M.D.,
Caterpillar Tractor Company,
Peoria, Illinois.

ROBERT A. KEHOE, M.D.,
Director, Kettering Laboratory of
Applied Physiology,
Cincinnati, Ohio.

RICHARD P. BELL, M.D.,
Cleveland Diesel Engine Division,
General Motors Corporation,
Cleveland, Ohio.

F. E. POOLE, M.D.,
Lockheed Aircraft Corporation,
Vega Aircraft Corporation,
Burbank, California.

Directors 1943-1945

JOHN J. WITTMER, M.D.,
Consolidated Edison Co. of
New York, Inc.,
New York, N. Y.

EDWARD P. HELLER, M.D.,
Assn. of Railway & Industrial
Physicians and Surgeons of Kansas City,
Division Surgeon, C.B. & Q. R.R.,
Kansas City, Missouri.

BEVERLY G. VOSBURGH, M.D.,
General Electric Company,
Schenectady, New York.

WILLIAM A. SAWYER, M.D.,
Eastman Kodak Company,
Rochester, New York.

HENRY S. BROWN, M.D.,
Michigan Bell Telephone Co.,
Detroit, Michigan.

THEODORE L. STORY, M.D.,
American Optical Company,
Southbridge, Massachusetts.

PERSONAL

DR. SHERMAN S. PINTO, New Orleans, supervisor of the section of industrial hygiene of the Louisiana State Board of Health, has resigned to accept a commission in the medical corps of the U. S. Army. W. H. REINHART, engineer in the section, is acting director.

DR. CHARLES-FRANCIS LONG, Philadelphia, is chairman of the Pennsylvania Medical Society's very able and energetic Commission on Industrial Health and Hygiene. DRS. JOHN R. CONOVER, Pittsburgh, and JOHN P. HARLEY, Williamsport, are co-chairmen. The members include: DR. GLENN S. EVERTS, Melrose, DR. JOHN D. HOGUE, Altoona, DR. JACK C. REED, Sharon, DR. FRED J. KELLAM, Indiana, DR. DONALD J. MCCORMICK, Chester, DR. PAUL E. SCHWARZ, Easton, DR. JAMES A. HUGHES, Mt. Carmel, DR. ANDREW J. GRIEST, Steelton, DR. FREDERIC C. LECHNER, Montoursville, DR. JOHN A. MITCHELL, Monaca, DR. GEORGE HAY, Johnstown, and DR. CHARLES H. MINER, Wilkes-Barre.

DR. LEVERETT D. BRISTOL, executive director of the Hospital Council of Greater New York, has been appointed Chairman of the Health Advisory Council of the Chamber of Commerce of the United States, and DR. ANTHONY J. LANZA, chief of the Occupational Hygiene Section of the Office of the Surgeon General, U. S. Army, as Chairman of the Council's Committee on Industrial Health. DR. BRISTOL succeeds DR. JAMES S. MCLESTER, of Birmingham, Alabama, who continues as a member of the Council but has relinquished the general chairmanship because of his increasing activity in the war service of the Federal government and the State of Alabama. In discussing the work of the Advisory Council, created last winter to operate with the Chamber's Insurance Department in advising business organizations throughout the country on industrial, individual and community health programs and in cooperating with national, state and local health agencies, DR. BRISTOL said: "The health of the nation's 60 million wage earners and war workers of

Industrial Medicine
Reg U S Pat Off
Official Publication

American Association of Industrial Physicians and Surgeons

Committees

Auditing:
HENRY S. BROWN, M.D., Chairman.
ELSTON L. BELKNAP,, M.D.
A. L. BROOKS, M.D.

Certification:
FREDERICK W. SLOBE, M.D., Chairman.
JOSEPH CHIVERS, M.D.
WILLIAM A. SAWYER, M.D.
CLARENCE D. SELBY, M.D.

Component Societies:
JOHN J. WITTMER, M.D., Chairman.
EDWARD P. HELLER, M.D.
F. T. MCCORMICK, M.D.

Finance:
T. LYLE HAZLETT, M.D., Chairman.
L. R. DANIELS, M.D.
F. W. SLOBE, M.D.

History:
LOYAL A. SHOUDY, M.D., Chairman.
OTTO P. GEIER, M.D.
C. F. N. SCHRAM, M.D.
A. H. WHITTAKER, M.D.

Medical Education:
M. H. KRONENBERG, M.D., Chairman.
SARAH I. MORRIS, M.D.
F. J. WAMPLER, M.D.

Membership:
FRANK P. HAMMOND, M.D., Chairman.
RICHARD P. BELL, M.D.
CHARLES-FRANCIS LONG, M.D.

Nutrition:
F. E. POOLE, M.D., Chairman.
F. C. BARR, M.D.
H. H. FELLOWS, M.D.
J. B. MCCONNAUGHEY, M.D.
H. S. MURAT, M.D.
WILLIAM A. SAWYER, M.D.

Psychiatry:
E. A. IRVIN, M.D., Chairman.
LYDIA G. GIBERSON, M.D.
HALSTEAD G. MURRAY, M.D.
CLARENCE D. SELBY, M.D.

Publication and Editorial Policy:
ROBERT A. KEHOE, M.D., Chairman.
L. D. BRISTOL, M.D.
A. G. KAMMER, M.D.
C. O. SAPPINGTON, M.D.

Venereal Disease:
CASSIUS H. WATSON, M.D., Chairman.
H. A. VONACHEN, M.D.
HARVEY BARTLE, M.D.

American Association of Railway Surgeons

J. L. CROOK, M.D., Jackson, Tenn.
President.

HAROLD A. SPILMAN, M.D., Ottumwa, Ia.
Vice-President.

A. J. O'BRIEN, M.D., Ironwood, Mich.
Vice-President.

JOHN J. BRANDABUR, M.D., Huntington, W. Va., Vice-President.

T. L. HANSEN, M.D., Chicago.
Treasurer.

R. B. KEPNER, M.D., Chicago.
Secretary.

Executive Board

A. R. MEETZ, M. D., Chicago, Chairman
JOHN R. NILSSON, M.D., Omaha, Neb.
W. J. LANCASTER, M.D., Wilmington, N. C.
D. B. MOSS, M.D., Palmyra, Mo.
IRVING S. CUTTER, M.D., Chicago.
HARVEY BARTLE, M.D., Philadelphia.

★ ★

ESTABLISHED IN PEACETIME . . . CONTINUED IN WARTIME

CAMP

CONTRIBUTIONS TO THE NATION'S HEALTH EDUCATION

★ ★

THE CAMP TRANSPARENT WOMAN

. . . created by S. H. Camp & Company as a contribution to public health education. Under the sponsorship of leading medical societies the Transparent Woman was seen from coast to coast by more than 60,000 physicians and 12,300,000 laymen . . . today continues to attract thousands of visitors at its permanent home in the Museum of Science and Industry at Chicago.

Dedicated to those who are furthering the Health Education of the American Public . . . to assist them in their work toward better Health through Better Posture . . . the Samuel Higby Camp Institute for Better Posture has been organized to maintain a year-round flow of timely educational material to members of the medical profession, schools, colleges and industrial and public health groups.

CAMP INSTRUCTIONAL COURSES

. . . have been an important means of providing thousands of American women with the scientific aid to correction of figure faults by assuring them professional fit of their CAMP Supports. Especially trained in the human anatomy with relation to scientific support requirements, thousands of Camp-trained fitters who have taken these courses are invaluable to assuring the physician that his prescription will be followed to the letter.

THE SAMUEL HIGBY CAMP INSTITUTE FOR BETTER POSTURE . . . an institution of S. H. Camp & Company that has brought the importance of good posture and its relation to good health to the attention of millions of Americans. Enthusiastically supported by outstanding newspaper and magazine editors . . . National Posture Week has the endorsement of leading health, medical and educational authorities everywhere.

★ ★

S. H. CAMP AND COMPANY, JACKSON, MICHIGAN

World's largest manufacturers of scientific supports

Offices in NEW YORK; CHICAGO; WINDSOR, ONTARIO; LONDON, ENGLAND

★ ★

Association for the Advancement of Industrial Medicine and Surgery Inc.

PURPOSE: To disseminate accurate medical knowledge in reference to the diagnosis and treatment of all conditions arising out of and in the course of employment.

Officers

HENRY C. JOHNSTON, M.D., President,
90 John Street, New York, N. Y.

RUSSELL C. KIMBALL, M. D., Vice-President,
4 Irving Place, New York, N. Y.

JULIUS BRANDWEIN, M.D., Recording Secretary
446 West 34th St., New York, N. Y.

JOSEPH L. RAMIREZ, M.D., Treasurer,
30 Fifth Avenue, New York, N.Y.

JOHN J. BLACKFORD, Executive Secretary
370 Lexington Avenue, New York.

Executive Council

Term Expires 1944
T. WALLACE DAVIS, M.D.,
Borden Company, New York.
FREDERICK L. MOSSER, M.D.,
Third Avenue Railway Co., N. Y.
HARRY V. SPAULDING, M.D.,
General Accident Co., N. Y.

Term Expires 1945
HALCYON HALSTEAD, M.D.,
Pelham Manor, New York.
ANTHONY AVATA, M.D.,
Hartford Accident & Indemnity Company, New York.
J. W. HARRIS, M.D.,
Aetna Life Insurance Co., N. Y.

Term Expires 1946
FREDERICK H. ALBEE, M.D.,
New York, N. Y.
LT. COL. WILLIS W. LASHER,
West Point, N. Y.
JOHN J. WITTMER, M.D.,
Consolidated Edison Co., N. Y.

Committee Chairmen

Scientific Committee
IRVING GRAY, M.D.,
25 Plaza Street, Brooklyn, N. Y.

Legislative Committee
O. A. BRENENSTUHL, M.D.,
345 Hamilton St., Albany N. Y.

Public Relations Committee
ANTHONY AVATA, M.D.,
110 William St., New York, N. Y.

Membership Committee
RUSSELL C. KIMBALL, M.D.,
4 Irving Place, New York, N. Y.

Welfare Committee
SAMUEL G. FEUER, M.D.,
304 Marcey Ave., Brooklyn, N. Y.

Annual Dinner November 18, 1943
Annual Meeting December 15, 1943

Component Society of the American Association of Industrial Physicians and Surgeons.

Central States Society of Industrial Medicine and Surgery

Officers 1943-1944

W. M. HARTMAN, M.D.,
Macomb, Ill.
President

FRED M. MILLER, M.D.,
Chicago.
President-Elect

HERMAN W. WELLMERLING, M.D.,
Bloomington, Ill.
Vice-President

FRANK P. HAMMOND, M.D., Chicago
Secretary-Treasurer

Board of Governors

Terms to Expire 1944.
WALTER L. JONES, M.D., Lacrosse, Wis.
JAMES A. VALENTINE, M.D., Chicago
ROLAND A. JACOBSON, M.D., Chicago

Terms to Expire 1945.
URBAN E. GEBHARD, M.D., Milwaukee
JOSEPH H. CHIVERS, M.D., Chicago
LEWIS M. OVERTON, M.D., Des Moines, Iowa

Terms to Expire 1946.
C. O. SAPPINGTON, M.D., Chicago.
H. A. VONACHEN, M.D., Peoria, Ill.
D. ORIS CONLEY, M.D., Streator, Ill.

Component Society of the American Association of Industrial Physicians and Surgeons.

Hawaiian Society of Industrial Physicians and Surgeons

IVAR LARSEN, M.D., Kohala, Hawaii,
President.
C. L. CARTER, M.D., Haina, Hawaii,
Vice-President.
H. M. PATTERSON, M.D., Olaa, Hawaii,
Secretary-Treasurer.

Component Society of the American Association of Industrial Physicians and Surgeons.

every kind and type is vitally important to the war effort. In the last quarter century the hygiene of American industry has made notable progress, commensurate, perhaps, with that made by production itself. Many American industries have attained an unsurpassed standard of healthful working conditions and of industrial health service. This achievement, however, carries with it the tendency to overlook the fact that the great majority of American wage earners are employed in small establishments. The rank and file of such industries are still a long way from providing for all the health service that has come to be regarded as normal and proper where a number of wage earners are assembled under one management. I believe that the National Chamber's Health Advisory Council, while seeking to stimulate programs for community and individual health, should place

All THE VIRTUES OF Coal Tar

DERMATOLOGISTS seem agreed that "the therapeutic action of coal tar depends on the aggregate effect of its components."

Hence the necessity for a preparation "delivering" a *whole* coal tar (not a fractional distillate), in order to achieve maximum antiseptic, antipruritic, keratoplastic and reducing action.

Daxalan is such a comprehensive agent—preferred by many outstanding clinicians because it is rigidly standardized as to physical and chemical characteristics, and is a delightfully smooth, homogenous, almost black (not light green or white) ointment.

Results from Daxalan applications in *psoriasis, eczema, dermatitis* and similar affections, have been excellent.

May we send a trial supply?

DOME CHEMICALS, INC.
250 EAST 43rd STREET
NEW YORK • N. Y.

Stock available at A. S. Aloe Co., St. Louis, Los Angeles, Kansas City, New Orleans

DAXALAN

—WHOLE CRUDE COAL TAR
RIGIDLY STANDARDIZED

New York State Society of Industrial Medicine

1942-43 Officers

O. A. BRENENSTUHL, M.D., President.
P. K. MENZIES, M.D., Vice-President.
PHILIP L. FORSTER, M.D., Treasurer.
FRANK E. REDMOND, Executive Secretary.

Directors

DR. H. H. BAKER, Rochester.
423 Granite Bldg.
DR. O. A. BRENENSTUHL
345 Hamilton St., Albany.
DR. PHILIP L. FORSTER, Albany.
367 State St.
DR. CHAS. D. SQUIRES, Binghamton
28 Conklin Ave.
DR. WILLIS C. TEMPLER, Corning
Corning Glass Works.
DR. FRANCIS J. RYAN, Syracuse.
New York State Railways.
DR. B. J. SLATER, Rochester.
Eastman Kodak Company.
DR. L. W. LOCKE, Utica.
288 Genessee St.
DR. A. M. DICKINSON, Albany.
New York Central R. R.
DR. M. S. BLOOM, Binghamton.
Dunn & McCarthy.
DR. E. MACD. STANTON, Schenectady.
American Locomotive Company.
DR. F. N. C. JERAULD, Niagara Falls.
723 Erie Ave.
DR. DONALD C. O'CONNOR, Buffalo.
International Railways.
American Radiator Co.
DR. RICHARD S. FARR, Syracuse.
Consulting Orthopedist.
DR. C. W. WOODALL, Schenectady.
146 Barrett St.
DR. JOHN L. NORRIS, Rochester.
Eastman Kodak Company, Kodak Park
DR. PAUL B. JENKINS, Binghamton.
141 Main St.
DR. E. A. VANDER VEER, Albany.
28 Eagle St.
DR. OTTMAR W. FREY, Oneida.
Oneida Ltd.
DR. HAROLD C. LYMAN, Utica.
250 Genessee St.
DR. P. K. MENZIES, Syracuse.
511 Medical Arts Bldg.
DR. FRED C. SABIN, Little Falls
23 W. Ann. St.
DR. REEVE M. BROWN, Buffalo.
Chevrolet-Motor and Axle
Div. of General Motors.

The Industrial Doctor
OFFICIAL SECTION OF THE NEW YORK STATE SOCIETY OF INDUSTRIAL MEDICINE

Official Section of the New York State Society of Industrial Medicine. Now combined with INDUSTRIAL MEDICINE

Published under supervision of the Ways and Means Committee of the New York State Society of Industrial Medicine. Editorial office, F. E. REDMOND, Managing Editor, 361 Delaware Avenue, Buffalo, N. Y. Articles herein do not necessarily reflect the opinion or policy of this journal nor of the New York State Society of Industrial Medicine.

Editorial Board

B. J. SLATER, M.D. M. S. BLOOM, M. D.
REEVE M. BROWN, M.D.
L. W. LOCKE, M.D. FRED C. SABIN, M.D
PAUL B. JENKINS, M.D.
WILLIS C. TEMPLER, M.D.
A. M. DICKINSON, M.D.
P. L. FORSTER, M.D.
CHAS. D. SQUIRES, M.D.
RICHARD S. FARR, M.D.
OTTMAR W. FREY, M.D.
HAROLD C. LYMAN, M.D.
P. K. MENZIES, M.D.
C. W. WOODALL, M.D.
FRANCIS J. RYAN, M.D.
D. C. O'CONNOR, M.D.
F. N. C. JERAULD, M.D.
E. MACD. STANTON, M.D.
E. A. VANDER VEER, M.D.
H. H. BAKER, M.D.
O. A. BRENENSTUHL, M.D.
JOHN L. NORRIS, M.D.

FRANK E. REDMOND, Managing Editor
361 Delaware Ave., Buffalo New York.

Georgia Association of Industrial Surgeons

BENJAMIN H. MINCHEW, M.D., Waycross
President

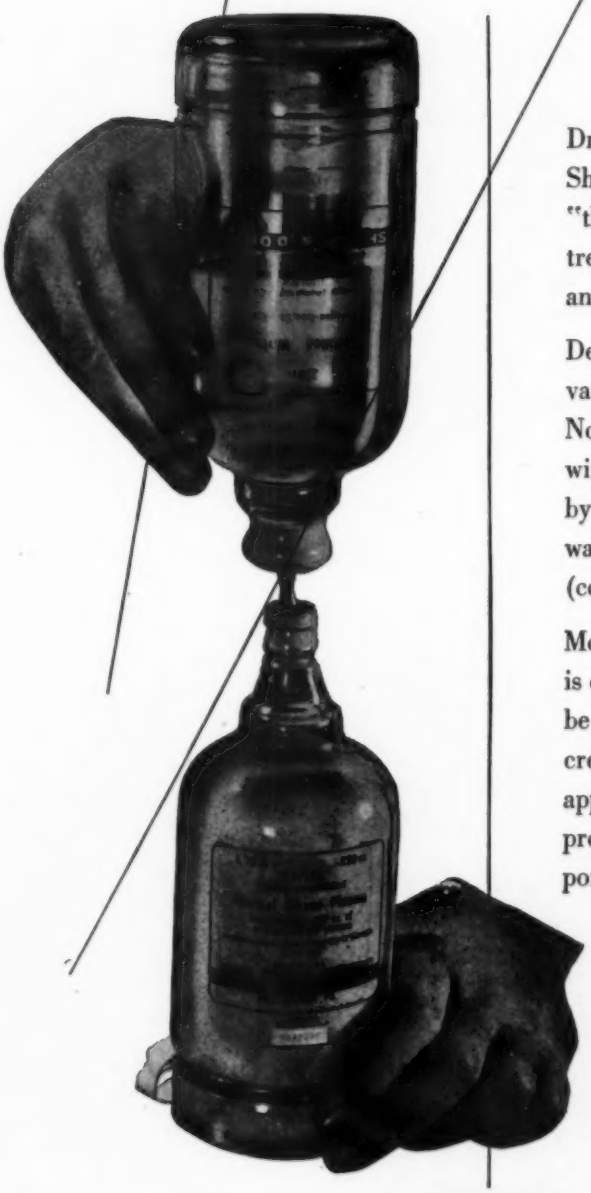
J. W. SIMONS, M.D., Brunswick
Vice-President

C. F. HOLTON, M.D., Savannah
Secretary-Treasurer

Component Society of the American Association of Industrial Physicians and Surgeons

from Stable, Dried Plasma . . . to Concentrated Plasma . . .

to Normal Human Plasma



Dried Blood Plasma, a development of Sharp & Dohme research, is considered "the most satisfactory blood substitute for the treatment of burns, shock, hemorrhage and other hypoproteinemic states."[1]

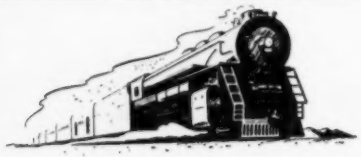
Desiccated from the frozen state under high vacuum and sealed under vacuum, 'Lyovac' Normal Human Plasma may be kept indefinitely without refrigeration and is quickly restored by addition of the sterile, pyrogen-free distilled water provided with each unit. Hypertonic (concentrated) solutions are easily prepared.

Moreover, 'Lyovac' Normal Human Plasma is composed of pooled material and may therefore be given without delay for typing or cross-matching. Each 250-cc. unit contains approximately as much osmotically active protein as 500 cc. of whole blood. This stable, portable preparation may be obtained at drug stores and hospitals throughout the United States, Canada and Latin America . . . **Sharp & Dohme, Philadelphia 1, Pa.**

1. Military Surgeon, 90:306, 1942.

'LYOVAC' normal human PLASMA

A Development of Sharp & Dohme Research



Association of Railway and Industrial Physicians and Surgeons of Kansas City

Officers

EDWARD P. HELLER, M.D., President.
CARL H. BRUST, M.D., Vice-President.
EUGENE BLACK, M.D., Secretary-Treasurer.

Directors

MATTHEW W. PICKARD, M.D.
JOHN E. CASTLES, M.D.
F. L. FRIERABEND, M.D.
VINCENT T. WILLIAMS, M.D.
JOHN H. OGILVIE, M.D.

Component Society of the American Association of Industrial Physicians and Surgeons.

Michigan Association of Industrial Physicians and Surgeons

Officers

CLARENCE D. SELBY, M.D., Detroit
President
LEON SEVEY, M.D., Grand Rapids
President-Elect
DONALD R. BRASIE, M.D., Flint
Vice-President
J.DUANE MILLER, M.D., Grand Rapids
Secretary-Treasurer
A. L. BROOKS, M.D., Detroit
Secretary-Treasurer (alternate)

Board of Directors

HENRY COOK, M.D., Flint
FRANK MCCORMICK, M.D., Detroit
R. H. DENHAM, M.D., Grand Rapids

Component Society of the American Association of Industrial Physicians and Surgeons.

Chicago Society of Industrial Medicine and Surgery

1943-44 Officers

JOSEPH H. THOMAS, M.D., Chicago.
President.
CHARLES DRUECK, JR., M.D., Chicago.
Vice-President.
FRANK P. HAMMOND, M.D., Chicago.
Secretary-Treasurer.

Board of Governors

Terms to Expire 1944

ROLAND A. JACOBSON, M.D., Chicago.
O. WALTER REST, M.D., Chicago.
GERALD J. FITZGERALD, M.D., Chicago.

Terms to Expire 1945

THOMAS C. BROWNING, M.D., Chicago.
KARL G. RUNDSTROM, M.D., Chicago.
J. DANIEL WILLEMS, M.D., Chicago.

Terms to Expire 1946

CLARENCE W. HENNAN, M.D., Chicago.
DWIGHT I. GEARHART, M.D., Chicago.
GEORGE R. NICHOLS, M.D., Chicago.

Florida Association of Industrial Surgeons

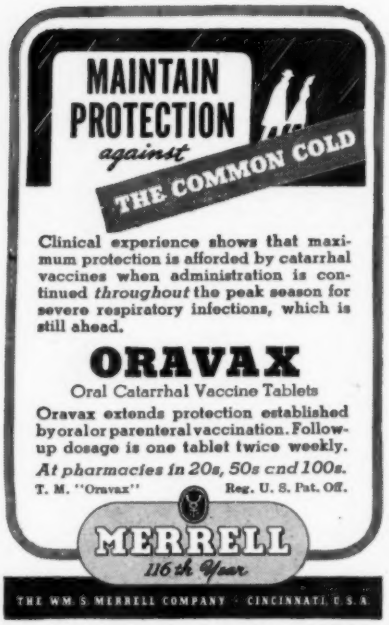
Officers

FRANK D. GRAY, M.D., President
KENNETH A. MORRIS, M.D., President-Elect
HARRISON WALKER, M.D., Vice-President
FRANK T. BARKER, M.D., Secretary-Treasurer

Directors

G. F. OETGEN, M.D. A. M. BIDWELL, M.D.
LLOYD J. NETTO, M.D. F. A. VOGT, M.D.

Component Society of the American Association of Industrial Physicians and Surgeons.


MAINTAIN
PROTECTION
against
THE COMMON COLD
Clinical experience shows that maximum protection is afforded by catarrhal vaccines when administration is continued *throughout* the peak season for severe respiratory infections, which is still ahead.
ORAVAX
Oral Catarrhal Vaccine Tablets
Oravax extends protection established by oral or parenteral vaccination. Follow-up dosage is one tablet twice weekly.
At pharmacies in 20s, 50s and 100s.
T. M. "Oravax" Reg. U. S. Pat. Off.
MERRELL
116th Year
THE WM. S. MERRELL COMPANY · CINCINNATI, U. S. A.

special emphasis on the health of workers, particularly in the smaller plants, few of which, at present, make adequate provision for the medical supervision and care which is so essential to maintaining full productive capacity." DR. BRISTOL assumes the chairmanship of the Health Advisory Council with a broad background of experience in the field of medicine and public health. A graduate in medicine of Johns Hopkins University, and with a degree in public health from Harvard, he first practiced medicine in St. Paul, Minnesota, was Professor of Bacteriology at the University of Syracuse and the University of North Dakota, and was Fellow and Assistant at the Harvard Medical School, and State Commissioner of Health for Maine. He also was Professor of Preventive Medicine and Public Health at the University of Minnesota, and has been Health Director of the American Telephone & Telegraph Company since 1929, until his acceptance of the directorship of the Hospital Council of Greater New York on December 1, 1943. He was one of the pioneers in the field of industrial health and is a recognized authority in this field. . . . DR. LANZA, who suceeds DR. BRISTOL as chairman of the Chamber's Committee on Industrial Health, has been active in the field of industrial hygiene for the last 25 years. He was in charge of Industrial Hygiene for the U. S. Public Health Service,

New Jersey Association of Industrial Physicians and Surgeons

Officers

President
E. E. EVANS, M.D.
E. I. duPont de Nemours,
Dye Works Hospital, Deepwater, N. J
Vice-President
WM. H. MCCALLION, M.D., F.A.C.S.,
General Aniline Co.,
722 Westminster Ave., Elizabeth, N. J
Treasurer
H. IRVING DUNN, M.D.
Merck & Co.,
Rahway, N. J.
Secretary
RUSSELL G. BIRRELL, M.D.
Standard Oil Co. of New Jersey,
Bayway Refinery, Linden, N. J.

Directors

J. M. CARLISLE, M.D.
Merck & Co., Rahway, N. J.
A. F. MANGELSDORFF, M.D.
Martinsville, N. J.
DONALD O. HAMBLIN, M.D.
American Cyanamid Co.,
39 Rockefeller Plaza, New York City

Component Society of the American Association of Industrial Physicians and Surgeons.

Milwaukee Association of Industrial Physicians and Traumatic Surgeons

Officers

President
S. H. WETZLER, M.D.
606 W. Wisconsin Ave., Milwaukee
Vice-President
ELSTON L. BELKNAP, M.D.
231 W. Wisconsin Ave., Milwaukee
Secretary-Treasurer
GEORGE H. HOFFMANN, M.D.
7006 W. Greenfield Ave., Milwaukee

Board of Directors

U. E. GEBHARD, M.D.
1332 S. 16th Street, Milwaukee
H. G. OAKLAND, M.D.,
1651 N. 12th St., Milwaukee
EDWARD QUICK, M.D.,
411 E. Mason St., Milwaukee
DAVID MEHIGAN, M.D.,
231 W. Wisconsin Ave., Milwaukee

Maryland Association of Industrial Physicians and Surgeons

President
DR. HERBERT C. BLAKE
Medical Arts Building, Baltimore
Vice-President
DR. HAROLD BOHLMAN
Medical Arts Building, Baltimore
Secretary-Treasurer
DR. ROBERT F. CHENOWITH
1127 St. Paul St., Baltimore

Component Society of the American Association of Industrial Physicians and Surgeons.

Cole's **CALOE OINTMENT**

TESTED BY FLAME • PROVED BY —Results—

For the local treatment of burns and scalds CALOE OINTMENT offers quick relief of pain plus effective therapeutic action. Severe burns respond more rapidly to this superior medication.

Pertinent literature and sample of CALOE OINTMENT on request.

℞ **BUY MORE WAR BONDS**

COLE CHEMICAL COMPANY • 3721-27 LACLEDE AVE., ST. LOUIS 8, MO.

Make YOUR INSTRUMENT BUYING GUIDE

The name Kny-Scheerer is more than a buy-word among the many surgeons and hospitals who predicate their choice of surgical instruments upon superior qualities that contribute to longer periods of satisfactory service. To these discriminating buyers, the K-S trademark is a recognized symbol of correctness of design, undeviating accuracy and dependability . . . comparable only to quality instruments previously imported.

Significant . . . a cost analysis of surgical instrument expenditures often reveals the fact that purchases of instruments built up to quality are the least expensive over a given period of time.

Your dealer can supply you

KNY-SCHEERER CORPORATION

21-09 Borden Avenue • Long Island City, N. Y.

THIS ESTABLISHED TRADEMARK IS YOUR GUARANTEE

Western Association of Industrial Physicians and Surgeons

Officers

C. A. WALKER, M.D., F.A.C.S., President.
Chief Surgeon, Southern Pacific Co.-Pacific Lines,
Southern Pacific Hospital,
San Francisco, California.

RUTHERFORD T. JOHNSTONE, M.D., Secretary.
Director, Dept. of Occupational Diseases,
Golden State Hospital,
Los Angeles, California.

J. M. MCCULLOUGH, M.D., Treasurer.
Plant Physician, Union Oil Company,
Oleum Plant,
California and Hawaiian Sugar Refining Corporation, Ltd.,
Crockett, California.

Directors

ROBERT T. LEGGE, M.D.,
Professor of Hygiene, University of California, Berkeley, California.

WILLIAM P. SHEPARD, M.D.,
Asst. Secy. and Pacific Coast Welfare Director, Metropolitan Life Insurance Co., 600 Stockton St., San Francisco, California.

R. O. SCHOFIELD, M.D.,
1027 Tenth Street,
Sacramento, California.

JOHN D. BALL, M.D.,
Spurgeon Building,
Santa Ana, California.

Chairman Board of Directors
BENJAMIN F. FREES, M.D., F.A.C.S.,
Chief Surgeon, Armour & Company,
Firestone Tire and Rubber Company,
947 W. 8th St.,
Los Angeles, California.

Executive Secretary
ELIZABETH M. CAFFREY, R.N., P.H.N.,
California and Hawaiian Sugar Refining Corp., Ltd.,
Crockett, California.

Component Society of the American Association of Industrial Physicians and Surgeons.

Association of Surgeons of the New York Central System

Officers

B. L. COLEY, M.D., F.A.C.S., President
N. W. GILLETTE, M.D., Vice-President
H. M. LONG, M.D., F.A.C.S., Vice-President
G. H. MARCY, M.D., Vice-President
H. A. FATHAUER, Secretary-Treasurer
Office of Secretary-Treasurer,
413 LaSalle Street Stration,
Chicago. Telephone WABash 4200

Executive Council

B. L. COLEY, M.D., F.A.C.S.
Chief Surgeon, New York City
L. A. ENSMINGER, M.D., F.A.C.S.
Chief Surgeon, Indianapolis
H. A. FATHAUER
Secretary-Treasurer
GEORGE P. MYERS, M.D., F.A.C.S.
Medical Director Detroit
F. E. PIERCE, M.D., F.A.C.S.
Chief Surgeon, Chicago
HERBERT M. LONG, M.D., F.A.C.S.
Chief Surgeon, Pittsburgh
OLIVER G. BROWNE
General Claims Attorney

New England Conference of Industrial Physicians

Officers

DR. J. NEWTON SHIRLEY, Director
Arrow Mutual Liability Insurance Co.,
Chestnut Hill, Massachusetts.

DR. D. L. LYNCH, Assistant Director
Medical Director, New England Telephone & Telegraph Co.,
245 State Street, Boston, Massachusetts.

DR. J. ALLAN THOMPSON,
Secretary-Treasurer, New England Telephone and Telegraph Co.,
245 State Street, Boston, Massachusetts.

Board of Directors

DR. J. F. KENNEY
Medical Director,
Lorraine Manufacturing Co.,
209 Broadway, Pawtucket,
Rhode Island.

DR. H. G. MURRAY
Dennison Manufacturing Company,
Framingham, Massachusetts.

DR. THOMAS P. KENDRICK
Boston Woven Hose Company,
Boston, Massachusetts.

Component Society of the American Association of Industrial Physicians and Surgeons.

was Chief Surgeon of the U. S. Bureau of Mines, was special staff member of the Rockefeller Foundation on the International Health Board and, prior to his present connection, was responsible for the industrial hygiene activities of the Metropolitan Life Insurance Company. He is a member of the Industrial Health Council of the American Medical Association, and Chairman of the Medical Committee of the Industrial Hygiene Foundation, of Pittsburgh. . . . THE basic objective of the Chamber's Health Council is to enhance the nation's human resources—and hence its productive efficiency—through prevention and reduction of illness and accidents, and by increasing the physical fitness and well-being of its citizens. It seeks to distribute, and make

NICOTINE CONTENT
Scientifically Reduced to LESS than 1%

TESTING SANO CIGARETTE SMOKE FOR ITS NICOTINE CONTENT

SANO cigarettes are a safe way and a sure way to reduce your patient's nicotine intake. Sano provide that substantial reduction in nicotine usually necessary to procure definite physiological improvement. With Sano there is no question about the amount of nicotine elimination. With Sano you encounter none of these variable factors involved in methods which merely attempt to extract nicotine from tobacco smoke. With Sano, the nicotine is actually removed from the tobacco itself. Sano guarantees always less than 1% nicotine content. Yet Sano are a delightful and satisfying smoke.

Cigarettes · Cigars · Pipe Tobacco

WARNING
Chemical analyses show that pinches of cotton used in cigarette mouth-pieces are entirely ineffective in removing any appreciable amount of nicotine from cigarette smoke.

FREE PROFESSIONAL SAMPLES, For Physicians

IM—2 44 HEALTH CIGAR CO. INC. 158 WEST 14TH ST.—NEW YORK, N.Y.

PLEASE SEND ME PROFESSIONAL SAMPLES OF SANO DENICOTINIZED PRODUCTS. NICOTINE CONTENT LESS THAN 1%

NAME ..... M.D.

ADDRESS .....

American Industrial Hygiene Association

Officers 1943-1944

H. H. SCHRENK, Ph. D., President.
U. S. Bureau of Mines, 4800 Forbes Street, Pittsburgh, Pennsylvania.

J. J. BLOOMFIELD, President-Elect.
Sanitary Engineer, National Institute of Health, U. S. Public Health Service, Bethesda, Maryland.

PHILIP DRINKER, Past President.
Division of Industrial Hygiene,
Harvard School of Public Health,
55 Shattuck Street, Boston.

EDGAR C. BARNES, Secretary.
Industrial Hygiene Laboratory
Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pennsylvania.

J. B. LITTLEFIELD, Treasurer.
American Brake Shoe Co.,
Chicago, Illinois.

Board of Directors

MANFRED BOWDITCH,
Director, Division of Industrial Hygiene, Massachusetts Department of Labor and Industries, 23 Joy Street, Boston.

WARREN A. COOK,
Division of Industrial Hygiene and Engineering Research, Zurich Insurance Companies, Chicago.

J. WILLIAM FEHNEL,
Division of Industrial Hygiene,
Metropolitan Life Insurance Company,
1 Madison Avenue, New York.

GORDON C. HARROLD, Ph.D.,
Industrial Hygiene Laboratories,
Chrysler Corporation, 341 Massachusetts Avenue, Detroit, Michigan.

LT. COL. T. F. HATCH,
A. F. Medical Research Laboratory.
Fort Knox, Kentucky.

DON D. IRISH, Ph.D.,
Biochemical Laboratory, Dow Chemical Company, Midland, Michigan.

E. G. MEITER, Ph.D.,
Employers Mutual Liability Insurance Company, Milwaukee.

C. W. MUEHLBERGER Ph.D.,
Michigan State Dept. of Health
Lansing, Michigan.

J. H. STERNER, M.D.,
Eastman Kodak Company
Rochester, New York.

MAJOR R. C. STRATTON,
Safety and Security Branch,
Office of the Chief of Ordnance, Chicago.

Institute of Traumatic Surgery

Officers

PAUL B. MAGNUSON, President
JAMES J. CALLAHAN, Vice-President
ROLAND A. JACOBSON,
Secretary and Treasurer

Board of Governors

KELLOGG SPEED — ARTHUR H. CONLEY
J. B. WILLEMS — ERIC OLDBERG

American Conference on Industrial Health

Officers

VOLNEY S. CHENEY, M.D., President
EDWARD C. HOLMBLAD, M.D.
First Vice-President
FREDERICK W. SLOBE, M.D.
Second Vice-President
HAROLD A. VONACHEN, M.D., Treasurer
JAMES A. VALENTINE, M.D., Secretary
C. O. SAPPINGTON, M.D., DR. P. H.
Executive Director

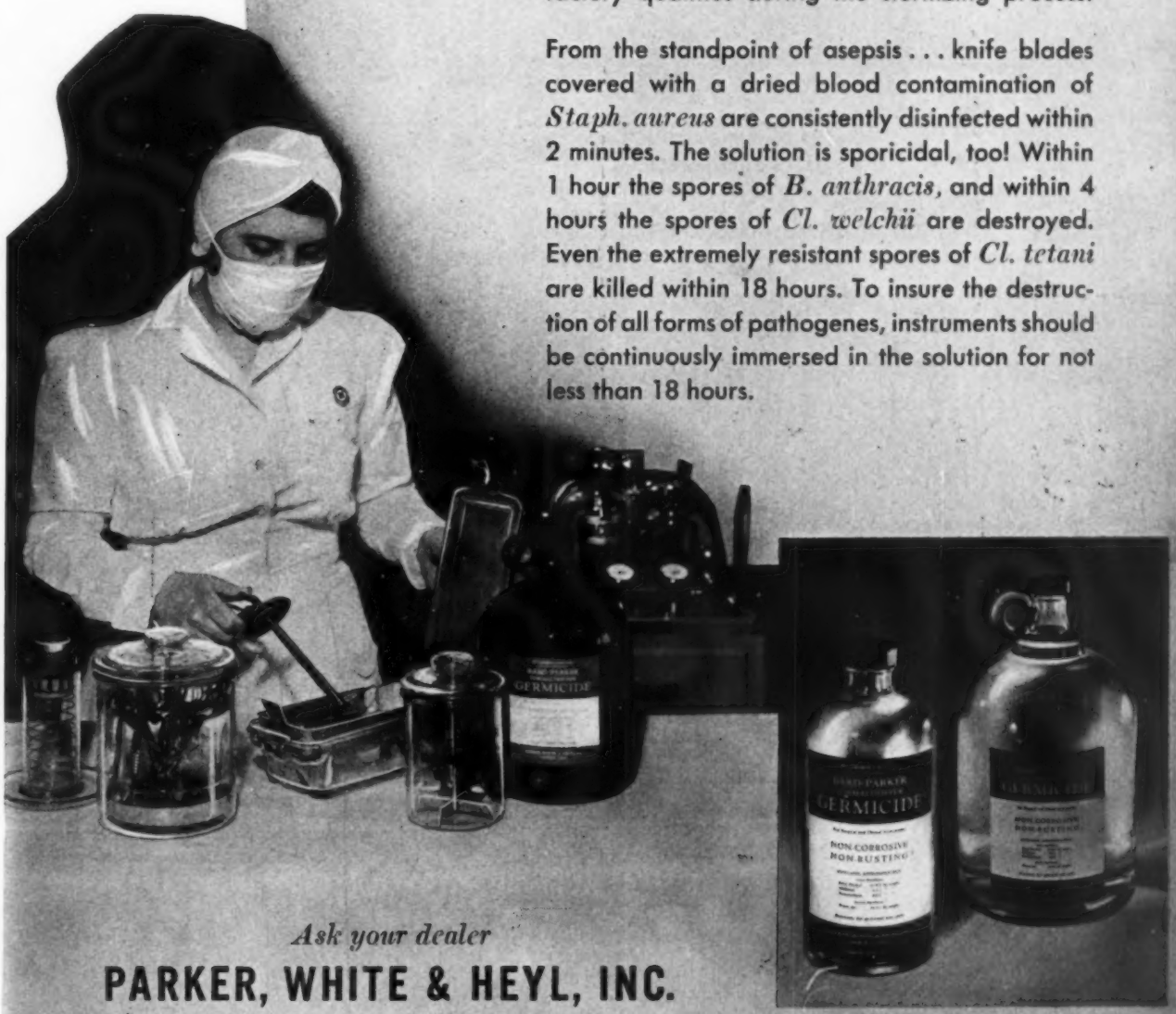
TO provide an organization, not for pecuniary profit, in which all agencies and societies, both medical and lay, concerned with the problems of industrial health can hold membership and can meet together in conference for the study, discussion and careful consideration of all industrial health problems and procedure; to engage in scientific research to determine the cause, nature, prevention and cure of diseases and injuries of occupations; to assist in establishing and supervising industrial health clinics to serve small industries; to establish and maintain hospitals which will furnish facilities for the care, treatment and study of occupational injuries and diseases; to make surveys of industrial medical services and recommendations for their improvement; to solicit, receive and administer funds for any purpose that will advance and/or improve industrial health; to establish undergraduate and/or post-graduate courses in industrial medicine and surgery and/or to cooperate with medical schools and industries in maintaining such courses; and to use all those means, which from time to time, may seem wise, for the advancement of industrial health.

Protecting inherent qualities of instruments... secondary only to asepsis

Bard-Parker Formaldehyde Germicide

not only provides high germicidal potency—prolonged immersion of delicate steel instruments will not result in rust or corrosive damage. Obviously, the functional efficiency of any instrument depends upon such protection of its inherent factory qualities during the sterilizing process.

From the standpoint of asepsis . . . knife blades covered with a dried blood contamination of *Staph. aureus* are consistently disinfected within 2 minutes. The solution is sporicidal, too! Within 1 hour the spores of *B. anthracis*, and within 4 hours the spores of *Cl. welchii* are destroyed. Even the extremely resistant spores of *Cl. tetani* are killed within 18 hours. To insure the destruction of all forms of pathogenes, instruments should be continuously immersed in the solution for not less than 18 hours.



Ask your dealer

PARKER, WHITE & HEYL, INC.

DANBURY, CONNECTICUT

A BARD-PARKER PRODUCT

effective in all groups at the community level, the health knowledge which is already available, and to stimulate and secure the support of business men and layment for national, state and community health programs. The work of the Chamber, in cooperation with the American Public Health Association for the last 15 years, in evaluating local health activities and needs through the National Health Honor Roll, is thus expanded and broadened in scope.

GENERAL

THE general trend of compensation insurance rates for 1943 has continued to be downward although increases have appeared in several states as a result of either adverse experience or law amendments. Most states had legislative sessions during the past year. Approximately 183 bills affecting workmen's compensation procedure or costs were enacted out of a total of 721 bills introduced. Exclusive of occupational disease, the benefit provisions of the compensation acts of 19 states and the Territory of Hawaii were increased, the greater increase being in Michigan. Seven states enacted legislation affecting occupational disease coverage.

—W. F. ROEBER, in *New York Journal of Commerce*, January 17.

AT THE suggestion of the Medical Division of the U. S. Office of Civilian Defense, to prevent dangerous delay in diagnosis and to insure proper treatment during unconsciousness or coma, Eli Lilly and Company, Indianapolis 6, Indiana, in cooperation with the American Diabetes Association, will provide metallic identification tags to be worn by diabetic patients or carried in the pocket. The inscription reads "DIABETIC, If Ill Call PHYSICIAN." No advertising of any sort appears on the tags, which will be supplied to the medical profession on request.

Industrial Dentists

THE next meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL DENTISTS will be held in Room 7, Palmer House, Chicago, on Sunday, February 20, 1944, from 9:00 A.M. to 5:00 P.M. The morning will be devoted to a meeting of the Board of Directors, starting at 9:00. The business meeting, open to all members, will commence at 1:00 P.M., followed by the program, which will be held from 2:00 to 5:00. All dentists interested in industrial dentistry are invited.

"Industrial Health and the Doctor"

DRS. CAREY P. McCORD, FRANK F. TALLMAN and RUTHERFORD T. JOHNSTONE will address four conferences on "Industrial Health and the Doctor," at Toledo, Cleveland, Columbus and Cincinnati, Ohio, on February 7, 8, 9, and 10. The conferences are presented by the Ohio State Medical Association and the Ohio Department of Health, with the following program for all of the four meetings:

"Conservation of Industrial Manpower"—CAREY P. McCORD, M.D., Detroit, Medical Consultant, Chrysler Corporation, and Medical Director, Industrial Health Conservancy Laboratories, Detroit.

Informal Discussions: (1) "Why a Local Industrial Health Program." (2) "Planned Activity by the Local Committee on Industrial Health." (3) "Relationship Between the Medical Profession and the Ohio Industrial Commission." (4) "The Place of the Individual Physician in Industrial Health." (5) General Discussion; to be opened by CHRISTOPHER LEGGO, M.D., Chief of the Division of Industrial Hygiene, Ohio Department of Health.

"Absenteeism and the Doctor"—FRANK F. TALLMAN, M.D., Lansing, Michigan; Director of Mental Hygiene, Michigan State Hospital Commission.

"Occupational Disease Problems and How to Meet Them"—RUTHERFORD T. JOHNSTONE, M.D., Los Angeles; Director, Department of Occupational Diseases, Golden State Hospital, Los Angeles; former professor of medicine, University of Pittsburgh School of Medicine; consultant on occupational diseases, California State Board of Health; author of "Occupational Diseases."

Soap

BRITISH workers have discovered that a washing composition containing approximately 75% of borax and 25% of dry soap possesses considerable fungicidal properties, but is so mild in action as to reduce any tendency to dermatitis, according to an item in *Chemical and Engineer-*

THE RELIEF ROLE OF "MOIST HEAT"

MANY authorities advise the use of moist heat in the form of poultices for relieving the following symptoms when present in affections of the respiratory system:

- COUGH
- MUSCULAR AND PLEURITIC PAIN
- RETROSTERNAL TIGHTNESS
- SORENESS OF THE CHEST

Antiphlogistine as a medicated poultice provides a convenient method for applying moist heat for prolonged periods.

Antiphlogistine is valuable as an adjuvant in the symptomatic treatment of Bronchitis, Tracheitis, Chest Colds, Tonsilitis, Pneumonia, Pleurisy.

Antiphlogistine may be used with Chemo-therapy.

Formula: Chemically pure Glycerine 45.000%, Iodine 0.01%, Boric Acid 0.1%, Salicylic Acid 0.02%, Oil of Wintergreen 0.002%, Oil of Peppermint 0.002%, Oil of Eucalyptus 0.002%, Kaolin Dehydrated 54.864%.

The Denver Chemical Mfg. Co., New York 13, N. Y.

Antiphlogistine

The birth of Ply No. 11

Skin scare in Syracuse, Sheboygan or San Francisco brings anxious inquiry for aid. PLY field man speeds to scene to determine nature of hazard causing industrial dermatitis. PLY laboratory develops *new* formula to meet conditions not covered in standard PLY line. Positive results reported; new formula, PLY No. 11, takes its place in the proud PLY family . . . ready to meet similar conditions throughout the nation. For the skin disease problem in *your* plant, rely on PLY!

ninth edition—second printing

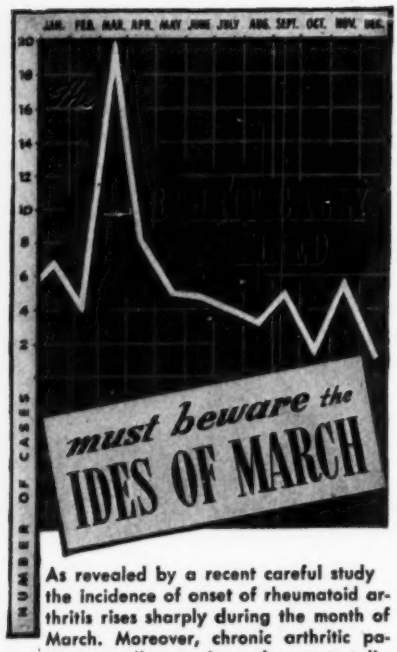
THE ANSWER TO INDUSTRIAL DERMATITIS

The unprecedented demand for this revised and enlarged manual of prevention and protection, quickly necessitated a second printing. Send for your free copy of this authoritative, illustrated booklet.

THE MILBURN COMPANY

3246 E. Woodbridge • Detroit 7, Michigan

PIONEERS OF SKIN PROTECTION IN INDUSTRY



As revealed by a recent careful study the incidence of onset of rheumatoid arthritis rises sharply during the month of March. Moreover, chronic arthritic patients usually experience the greatest discomfort in the spring months.

More and more physicians routinely prescribe Occy-Crystine in all arthritic cases because it effects such a thorough-going systemic detergence—so important in treating the extra-articular deviations typical of this condition:

1. It quickly relieves colonic stasis;
2. It markedly improves liver and gallbladder function;
3. It stimulates renal clearance of toxins; and
4. It releases colloidal sulfur, so frequently deficient in the arthritic economy.

*Dawson: in Nelson's New Loose-Leaf Med., Vol. V, p. 609.

OCCY-CRYSTINE LABORATORY, SALISBURY, CONN.

Formula: Occy-Crystine is a hypertonic solution of pH 8.4, made up of the following active ingredients—sodium thiosulfate and magnesium sulfate, to which the sulfates of potassium and calcium are added in small amounts, contributing to the maintenance of solubility.

Send for samples and full details.

OCCY-CRYSTINE

THE SULFUR-BEARING SALINE DETOXICANT-ELIMINANT

ing News (21:1753, 1943). In its finely divided form, the borax is said not to cause gumming or caking of the dry powdered soap. Described as a good cleanser, the mixture has a temporary, mild abrasive action that facilitates cleansing. . . . IN AN effort to reduce mercury fulminate dermatitis in the explosives industry, H. S. Mason and I. Botvinich of the U. S. Public Health Service have formulated a liquid soap, which by a change of color, shows the presence of traces of this dangerous chemical upon the skin. The formula of this special soap, as given in *Public Health Reports* (58:1183, 1943), is as follows: Diphenylthiocarbazone—0.18 gm.; triethanolamine—250.00 cc.; liquid soap—750.00 cc.; hydroquinone—0.015 gm. The soap, as produced, is orange in color, but in the presence of mercury salts it changes rapidly to a deep, easily recognized purple. The reagent soap solution is said to be so sensitive that one drop will indicate the presence of a minute quantity of mercury, from 0.000002 to 0.00001 gm., per square centimeter.

—From "Soap Uses," Association of American Soap & Glycerine Producers.

HEALTH in the SMALL PLANT

The Medical Department

EXPERIENCE has demonstrated that it is best to have the medical director report directly to top management, i.e., either to a vice-president in charge of operating problems or the chief executive of the company. In several companies where the medical director has been responsible to the personnel manager or officials of other service departments, many difficulties have been encountered. Furthermore, the physician should be given a good salary, and adequate funds should be set aside for the program so that quibbling over minor expenditures will be avoided. Physicians, as a group, have a wide background of knowledge in various fields, and they have spent many years of their lives in advanced study. They should have a good deal of freedom in carrying out their program. At the same time, they should be assigned able assistants and secretaries for the efficient administration of routine details. Problems with which the medical department is concerned are usually of major importance; the executive departments should be informed of the results of the work and should participate in the major decisions involved. It is important also to consider the relationship of the medical program to the medical practice in the community. There are three classes of physicians in industry: full time, part time, and on call. Full-time physicians give their entire effort to industry; there is no doubt but that they are the most satisfactory choice for companies instituting medical programs. The others are general practitioners or specialists who give limited attention to industry, usually in the treatment of occupational diseases and injuries; they can be of real value to the smaller companies which cannot afford full-time physicians. Industrial medicine is concerned with the policies and ideals of the practice of medicine in relation to the health of working people, as distinguished from the case work of the private practitioners serving in industry. Fundamentally, industrial medicine is preventive medicine. Its chief objective is to furnish employees the best possible health protection, consistent with (a) the business of the company, which may be air transportation or manufacturing; (b) the employer's responsibility as fixed by law, i.e., the care of occupational injuries or diseases; and (c) the employees' rights to free choice of medical counsel, which conversely are the rights of physicians in private practice. Industrial organizations are not in the business of practicing medicine, and the ordinary employer should be concerned chiefly with services to protect his employees against harmful working conditions. Friction with local medical societies must be avoided. Cooperative practices between industrial and local physicians must be encouraged, if only because the private physician can neither make proper diagnosis nor prescribe effective treatment if he is completely unaware of the working conditions of his patient, or the precipitating causes of illness in the factory, such as poisons and dusts. Embarrassing failures in diagnosis have come from failure to ascertain facts concerning types of exposure. In the postwar period the role of medicine in industry is bound to become increasingly significant. The highly technical and mechanical nature of all modern industry involves great risks to the workers.

—From "A Medical Program for Aviation," by ROSS A. MCFARLAND, PH.D., in *Harvard Business Review*, Autumn Number, 1943. (See also page 191, herein.)

Functions and Scope

DR. VICTOR G. HEISER, medical consultant for the National Association of Manufacturers, is the medical authority for the study of workers' health embodied in the 80-page booklet, "Health on the Production Front," recently issued by the Association. Keyed to the small plant, the publication suggests to management the most effective methods, "tested by trial-and-error," of utilizing existing manpower to the fullest extent and in the healthiest way. The following are typical of the variety and coverage of the subjects included:

THE SMALL-PLANT DOCTOR: "A doctor 'on call' is not the answer to the problem of the small plant. He does not help until the accident or illness with all its attendant costs has occurred. A part-time doctor is preferable, because he can prevent damage. He should visit the plant at least once a week, spending on the average a minimum of one hour a week for every 100 employees."

THE SMALL-PLANT MEDICAL PROGRAM: "should include periodic inspection of the plant by the doctor. It should provide health preservation measures, including pre-employment and periodic physical examinations, first aid, prevention of infection, diagnosis and follow-up of occupational diseases and injuries, and health education of employees. It should provide emergency treatment

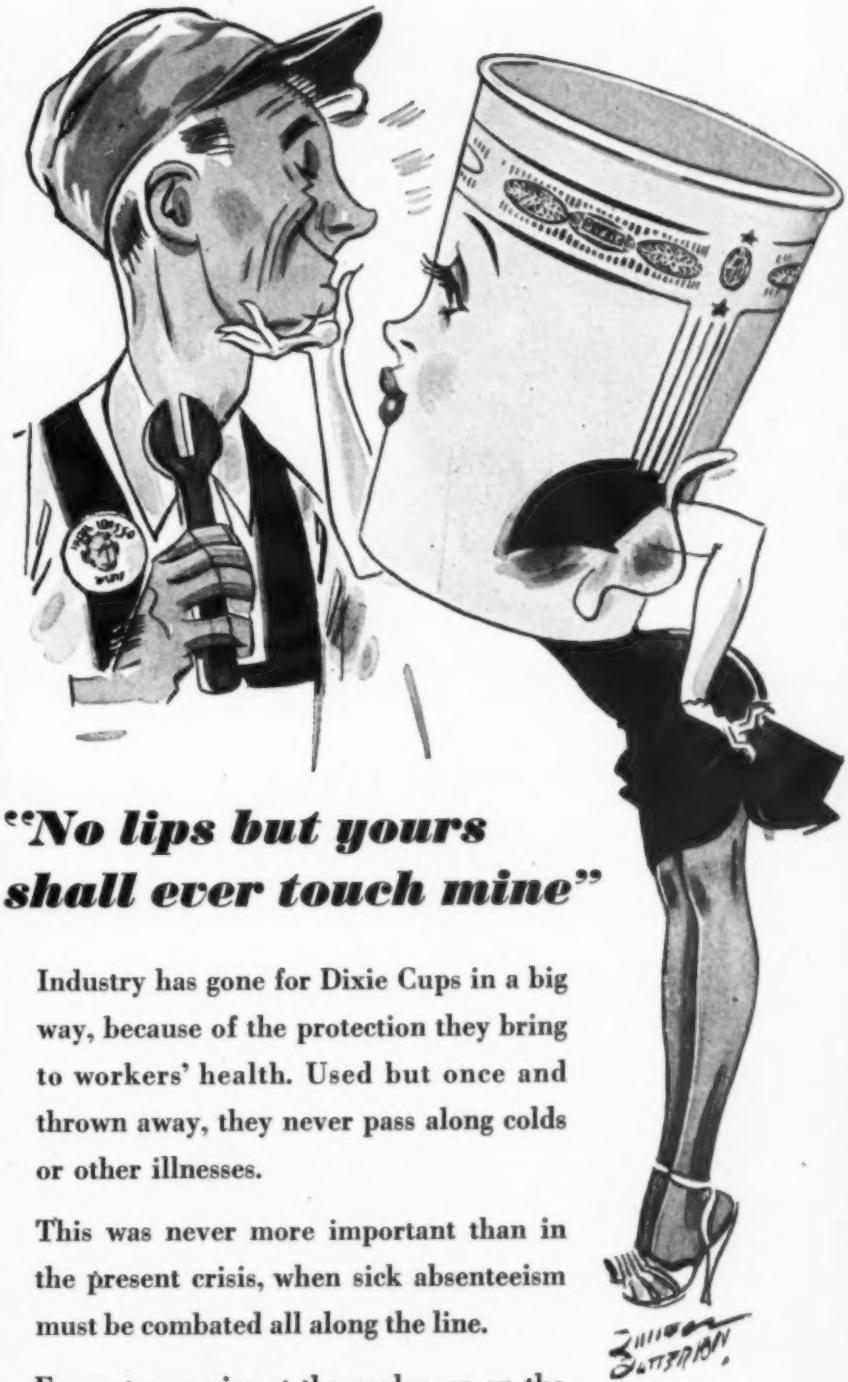
of employees taken sick on duty, ethical assistance to and cooperation with local private physicians, conference with the management on matters pertaining to industrial health and accurate medical records."

THE SMALL-PLANT INFIRMARY: "The estimated total cost of a 125 sq. ft. infirmary, including construction of walls of room, is $300, and of a 300 sq. ft. infirmary, approximately $425."

THE SMALL-PLANT NURSE: "A qualified nurse can be acquired through industrial nursing organizations or visiting nurse associations. She should spend at least two hours a week in the factory per 100 workers. Naturally, she will work directly under the doctor's orders. She will function, for the most part, on his 'standing orders,' thus reducing the time required for the doctor's visits in all but emergencies."

GROUP MEDICAL SERVICES: "One type of group service consists of having a doctor trained in industrial medical problems provide medical service in both the curative and preventive phases to a group of small factories geographically close together. In each locality in which there exists a unit of approximately 5,000 industrial workers, composed of the employees of any number of companies, a doctor and an emergency room are established. The extent to which industrial preventive medicine is practiced varies under this plan, but the plants should select a physician who has a definite knowledge of and interest in prevention rather than in mere 'finger wrapping.' In Philadelphia a plan has been in operation for some years in which one physician serves several small factories varying in size from 100 to 500 men. In each of these factories there is an examining room and a treatment room. The doctor is in attendance one hour per week and a nurse two hours per week per hundred employees. In this plan, the doctor conducts pre-employment and periodic check-up examinations, he is acquainted with the industrial processes and hazards of each plant, and advises management and engineers in the control of these hazards. In addition he takes care of industrial injury and emergency non-industrial illness and injury."

PRIVATE INDUSTRIAL MEDICAL SERVICES: "This is a plan whereby a private doctor maintains examination and treatment rooms in an industrial area. The main drawback is that there is often no provision for the practice of industrial preventive medicine for control of occupational or communicable disease. In New York, one such service was studied. At that time there were 10 full-time doctors on the staff, four full-time nurses, a masseur, and an x-ray technician. The equipment was modern and complete, with x-ray machines, fluoroscope, physiotherapy



"No lips but yours shall ever touch mine"

Industry has gone for Dixie Cups in a big way, because of the protection they bring to workers' health. Used but once and thrown away, they never pass along colds or other illnesses.

This was never more important than in the present crisis, when sick absenteeism must be combated all along the line.

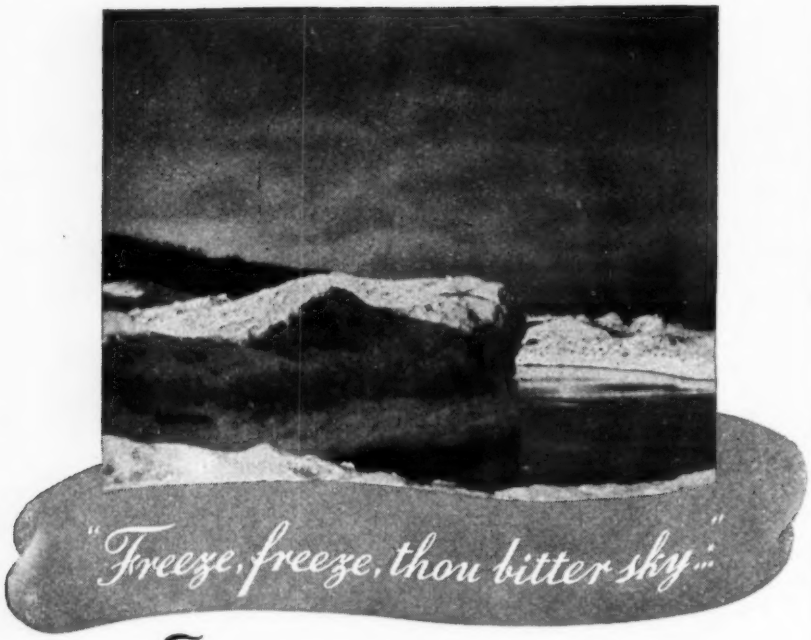
For water service at the cooler, or on the job, as well as for quick, clean feeding in the plant, Dixie Cups are a proven asset in plant efficiency.

Dixie and Vortex Cups are made at Easton, Pa., Chicago, Ill., Darlington, S.C. and Toronto, Canada.

We suggest you keep on asking for Dixie Cups even though they are hard to get. We're doing our best to catch up. The war-needs come first, then our old and regular customers. So keep on asking —maybe next time your Dixies will be available.

DIXIE CUPS

DRINKING CUPS AND FOOD CONTAINERS



THIS war-winter brings its devastating blitz of respiratory ailments and arthritic flare-ups which must be treated promptly, efficiently. Two effervescent products stand out as effective agents for bringing symptomatic relief—

Acetyl-Vess
(Buffered Salt of Aspirin)

Salici-Vess
(Buffered Salicylate-Alkali with Sodium Iodide)

These potent analgesic, antipyretic formulae are enhanced by the presence of alkali buffers which assure maximum tolerance and essential fluid intake. Buffer-alkali mechanism in combination with the effervescent (CO_2) factor hasten absorption by decreasing emptying time of the stomach.

Acetyl-Vess—tubes of 25 tablets. Salici-Vess—tubes of 30 tablets.

Available through your prescription pharmacy or medical supply house.

*Shakespeare, W.: As You Like It.

Effervescent Products, Inc., Elkhart, Indiana Dept. IM-2

Gentlemen: Send me a professional trial package of—Acetyl-Vess ☐ Salici-Vess ☐ (Mark preference)

Dr. ..... City .....

Address ..... State .....

apparatus, and laboratory. The work of the group included pre-employment and periodic physical examinations, treatment of injuries, and consultation on compensable injury cases. Emergency rooms were maintained in three industrial localities with arrangements with hospitals for serious cases. This type of practice is largely that of a compensation doctor, and the service is on a fee basis."

PHYSICAL EXAMINATIONS: "Physical standards must, in many cases, be lowered today in the present shortage of manpower. Therefore, special care should be taken by the examining physician to avoid placing a worker who has, let us say, heart disease, in a job which may cause further damage to his heart such as operation of a crane, where an attack might also endanger the lives of others or the safety of valuable machinery. But, where such considerations are not involved and the person simply sits at a bench, the examiner can afford to be more lenient."

WORKERS IN DEFENSE PLANTS: "Workers engaged in the more hazardous occupations of wartime, such as handling TNT and DNT, tetryl, ammonium picrate, benzene, and various leads, should be examined once a month. Each physician must be on the lookout for possible contamination in his plant from such causative agents as gases, vapors, and fumes, toxic metals or alloys, dusts, lubricants (especially cutting oils), radium, etc. Special care must be taken to ascertain the properties of new materials and processes, and those which, while not new to industry at large, may be new to a particular plant. Workers upon whose activities the safety of other workers depends should be examined often, probably semi-annually. Such a category would include all drivers of vehicles, cranes, trains, and guards and other key workers."

CHECK-UP OF EXECUTIVES: "The periodic physical examination of the plant executives and clerical workers must not be overlooked. Too often their health and well-being is left entirely up to them, with the result that top executives often work themselves to the point of a nervous or physical breakdown. All the aspects of industrial preventive medicine should be placed tactfully at their disposal by the industrial physician if the health of the plant personnel —both management and labor—is to be properly maintained."

IMMUNIZATION: "Prophylactic immunization against the common cold has been tried but not yet proved efficacious on a large enough scientific scale to be generally recommended by most authorities. There is, however, hope of future success, and progress is being made that may change the whole picture."

DENTAL PROPHYLAXIS: "Large plants have found it economical to employ one or more full-time dentists, with dental hygienists to do the cleaning or prophylaxis work. Smaller plants will find that dental service pays too, and they can achieve it by retaining a dentist, in cooperation with other small plants nearby, who will either go to each plant for treatment of workers or take them into his own office on a regular schedule. There are many ways this can be worked out locally."

VENEREAL DISEASES: "Of a million selectees and volunteers for the armed services between the ages of 21 and 35 it was found that 60,000 had a venereal disease ('VD'). The prevalence rate for syphilis was 45.2 per thousand, and 11.5 per thousand for gonorrhea. Using this as a basis, it has been estimated that there are 3,200,000 persons in this country who are infected with syphilis, a ratio of one infected person to every 42 of the population. Since about 75% of all syphilitic infections are acquired by persons between the ages of 15 and 35, and since many of this age range are being called upon to leave industry for the armed forces to be replaced by older persons, the tendency has been to overrate the 'VD' problem in wartime industry. However, the problem is still large and needs attention. A definite program for venereal disease control within the plant will be found to lessen work interruptions, absenteeism, and labor turnover, to increase production, and to lower copensation costs. It may also be expected to help rehabilitate a large group of employees who would otherwise be unemployed or who would perhaps work where no control was exercised, thus risking the danger of infecting others. Syphilitic workers can remain at work with safety to themselves and others

A Powerful Combat Team

The most widely prescribed vasoconstrictor to clear the way . . .

a potent bacteriostat to help "mop up" infection.

This new stable chemical compound possesses all the unique strength and safety of Neo-Synephrine and enhances the effectiveness of sulfathiazole. Free of appreciable adverse local or systemic side effects.

Neo-Synephrine

Sulfathiazolate

Available as a 0.6% solution in a buffered approximately isotonic vehicle in 1 oz. bottles with dropper for prescriptions, and in 16 oz. bottles for office and hospital use.

Trade Mark Neo-Synephrine *Reg. U. S. Pat. Office*

Frederick Stearns & Company

DETROIT, MICHIGAN

NEW YORK KANSAS CITY SAN FRANCISCO WINDSOR, ONTARIO SYDNEY, AUSTRALIA AUCKLAND, NEW ZEALAND

WHY MURINE

A BUFFERED ISOTONIC COLLYRIUM IS IMPORTANT IN INDUSTRIAL HYGIENE

•

Solutions that would be entirely harmless to the skin surfaces may injure the eye severely, due to osmotic pressure changes within the membrane cells. Pure water or hypotonic solutions used in the eye favor development of edema or swelling, while solutions of a higher salt concentration than the tears may cause a shrinkage or loss of water from the membrane cells.

It is important, therefore, that any aqueous solution used for cleansing or washing the eye be very close to the same osmotic pressure lor be in isotonicity with the tears which normally bathe the eye. The osmotic pressure of the tears is normally much higher than that of the blood, corresponding to about 1.4% solution of salt.

Murine has been adjusted to this range of osmotic pressure.

Normally, the tears are slightly alkaline, having a pH of approximately 8.0. Marked changes from this hydrogen ion content may also cause irritation. Murine has therefore been buffered to this pH range.

Murine is indicated for regular use in industrial plants where strong light, dust, or metallic particles are prevalent. In cases of injury to the eyes, Murine is an effective first-aid preliminary to medical inspection and treatment.

MURINE CONTAINS

Potassium Bicarbonate,
Potassium Borate,
C.P. Boric Acid,
Berberine Hydrochloride,
Glycerin,
Hydrastin Hydrochloride,
Sterilized Water,
'Merthiolate' (Sodium Ethyl Mercuri Thiosalicylate, Lilly) .001%.

THE MURINE COMPANY, INC.

CHICAGO, U. S. A.

under an organized program today. State and national public health offices are in a position to offer complete programs for VD control in industry today, and their advice should be sought."

REHABILITATION: "Industry's prewar program of limited rehabilitation is now being expanded on a fairly wide scale and must be expanded even further. Former workers, now handicapped, must be retrained for new work or trained to do the old job again, overcoming their handicap. Promising new workers who never before held a regular, full-time industrial job must be rehabilitated. If necessary to accomplish this, reconstructive and reparative surgery may be used. It might be suggested, in conclusion, that industry itself undertake to rehabilitate workers who, in the judgment of the industrial physician, have the ability and willingness to perform a useful task after whatever reconstructive program is necessary, and that the individual be given the opportunity to retain his personal pride by paying back to the company whatever he can of the cost of his rehabilitation after he shall have taken his place in society as a wage earner."

NUTRITION: "Management is in a strategic position to be of great help to the worker in nutrition education of both the direct and indirect type. Generally speaking, there are five lines of attack: (1) Education of the worker as to what constitutes an adequate diet and as to the dividends to be collected in terms of personal health and national security by sticking to it. (2) Education of his family—wife or mother—as to planning and preparing three nutritious meals a day, including an adequate lunch to be carried to work. (3) Provision of nutritious foods at the plant—in the cafeteria, at lunch counters, on rolling kitchens, and on the between-meals, supplementary 'snack-bars.' (4) Cooperation with local restaurant owners to provide nutritious foods under sanitary conditions for workers near the plant and in their home communities. (5) Making these nutritious foods available at low cost at the plant and in local restaurants, and education of the worker to spend enough of his money on food to receive an adequate diet at all times."

THE USE OF VITAMINS: "In general, experience so far does not indicate that vitamin 'pills' or concentrates should be fed indiscriminately to workers. The plant physician should determine the existence of vitamin deficiencies on an individual basis and as a result of investigation of individual food habits before prescribing vitamin concentrates . . . at present, industrial medicine believes that a man who is well fed according to high standards of good nutrition does not need any vitamin pills. On the other hand, there are cases where employees engaged in certain kinds of work, such as work with chemicals, have benefited from the use of indicated concentrates."

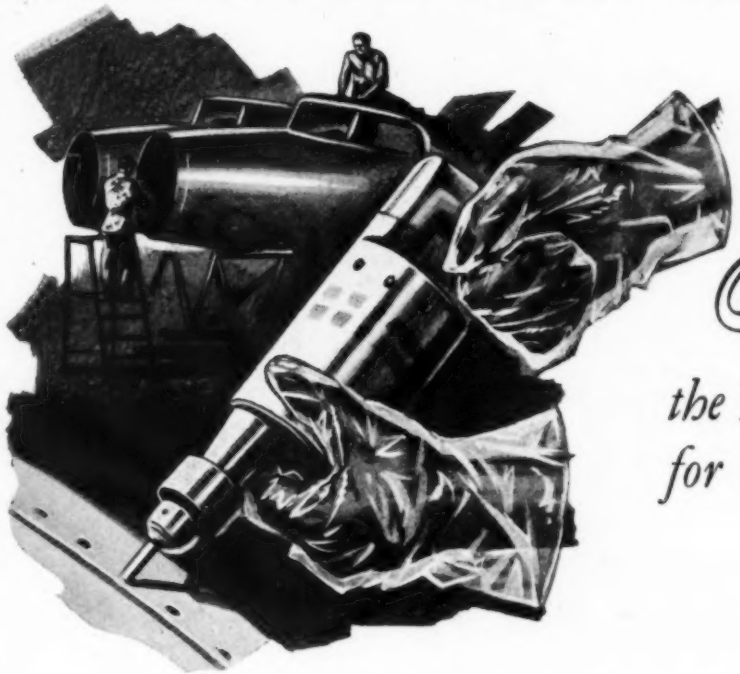
ABSENTEEISM: "In peacetime, sickness and injuries incurred off the job accounted for several times as much time lost from work for the average worker as did industrial disabilities. Remedial measures in the plant revolve around 'Six Committees to Combat Absenteeism' composed of management and employees: (1) Health committee—to promote cooperation with the medical department in its health program, medical and nursing service, etc.; (2) Safety committee—to promote employee cooperation with the plant safety program; (3) Transportation committee—car pools, assistance in getting gasoline, arrangements with transportation companies, etc.; (4) Housing committee—information service on houses, rooms, and apartments available, cooperation with local authorities and agencies regarding availability and reasonable rents, housing inspection assistance, etc.; (5) Production problems committee—suggestions as to scheduling explanations to workers, aid in avoiding interruptions; and (6) Publicity committee—to arrange for programs of motion pictures, guest appearances, radio programs, etc."

WOMEN: "In general, this country's war experience has shown that women war workers are absent from the job more often than men. In a California aircraft plant, recent

• TOUSHAY IS ECONOMICAL . . . ONLY A FEW DROPS IS ENOUGH FOR BOTH HANDS •

• KEEP TOUSHAY ON HAND IN DISPENSARY AND WASHROOMS FOR CONVENIENT USE •

• TOUSHAY IS EASY TO USE . . . THERE'S NO LASTING ODOR OR UNPLEASANT STICKINESS •



Toushay

the New Invisible Glove for Industrial Workers

Most workers can't wear gloves on the job—but they can *wear an invisible film to guard against skin infection*

TOUSHAY'S protective film serves as an invisible glove that helps guard the skin against the harsh effects of grime, strong solutions, and constant washing.

Tested under scientifically controlled conditions

The Test: Large numbers of workers with hands constantly exposed to dirt, grime and frequent washing applied TOUSHAY LOTION on one hand—not on the other. Both hands were repeatedly immersed in hot, soapy, alkaline solutions.

Results: The TOUSHAY-protected hands retained the natural skin lubricant (sebum), didn't pick up dirt so easily, and were cleaned more quickly. But the unprotected hands lost much of the natural skin oil and became dry and rough.

Recommend TOUSHAY's twofold protection to help safeguard hands against discomfort and liability to infection *before* exposure to dirt and grime . . . and to help compensate for the loss of natural skin lubricant *after* frequent washing with strong soap and antiseptic solutions.

Toushay

BRISTOL-MYERS COMPANY 19 West 50th Street, New York 20, New York

figures show an absence rate of 5.2% for women and of 3.2% for men, for example. Women are more frequently absent for short terms of one or two days than are men. This may be attributable to personal, physiological considerations or to home responsibilities; but, whatever the reason, absenteeism among women workers calls for special combative efforts on the part of management over and above those required to control male absenteeism. To avoid accidents, very careful training is given women who, by their aptitude tests, are known to be inexperienced with things mechanical. Warnings are repeated regarding the high recurrence of accidents in the home, especially in the kitchen and on stairs and steps. A hot, nutritious mid-shift meal seems important to the woman worker, and she is advised to get at least eight hours' sleep each night, suitable light exercise each day, and fresh air, besides sociability and recreation in her community. The nurse or industrial physician advises her on matters of personal hygiene and disease prevention. Transportation difficulties not only contribute to absenteeism among women but, unless remedied, often make it impossible or inadvisable for them to work at all. Especially is this so when night-shift work is required. Companies patrol the areas near the plant, but women may still be unprotected at the 'end of the line.' Perhaps the best remedy in such cases is to put the women on the day shift, if provision cannot be made for wholly satisfactory transportation facilities."

COMMENT and OPINION

Quotation Bull's Eyes

THIS month's addition to the part of our quotation file which is labeled "Priceless" is from "Book Notices" in *J.A.M.A.*, January 15, 1944, regarding a $12.00 volume: "When the reviewer first saw this book he wondered who would buy it at the excessive price; after reading the book he wondered who would want it at any price." . . . THIS month's quotation from the classics is from the immortal bard's Macbeth: "And you all know security is mortal's chiefest enemy."

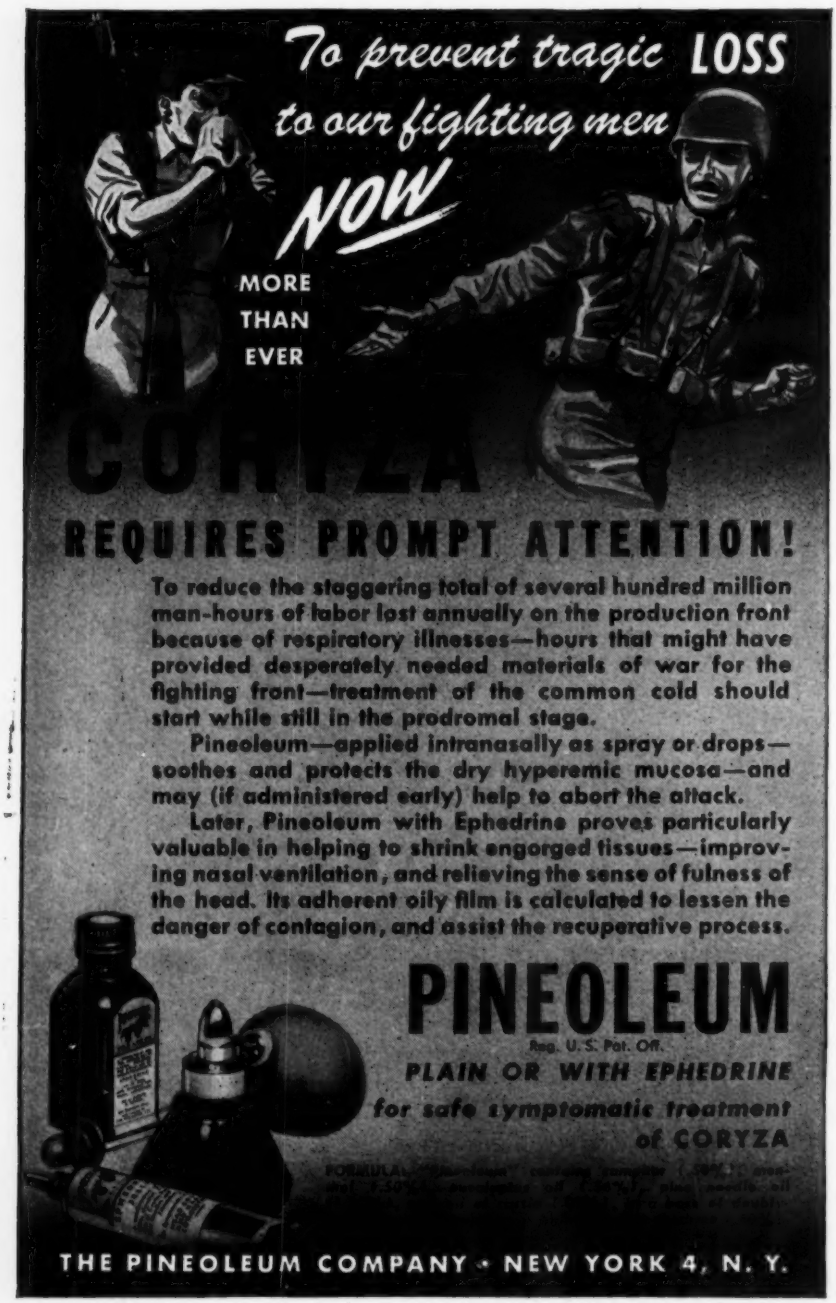
Frozen

PHYSICIANS, dentists, veterinarians, sanitary engineers, and nurses who are salaried employees in essential or locally needed activities are hereafter subject to the same provisions of any employment stabilization program which applies to other workers in such activities. Such professional employees may not change their jobs without getting statements of availability from the United States Employment Service, or being referred to new jobs by the USES. The USES, however, will make referrals of such employees only after consulting the State Chairman of the Procurement and Assignment Service. This procedure will insure referral of these professional workers to jobs where they can make their most effective contributions to the war effort. Upon approval of the Regional War Manpower Director, any State Director may delegate the duty of referring such employees to new jobs to the state and local offices of the Procurement and Assignment Service.

—War Manpower Commission Release, January 10.

Health

MEREDITH discusses the health of people in general. He points out that about 10% of the population may be considered as being sick; one-half of these seriously ill. Ten per cent of the population may be classified as "well" while the large intermediate group at the best can only be considered as being "semi-well." Stated somewhat differently, Ryerson would classify this intermediate group of 90% as follows: 30% of these individuals have loss of health; 30% have poor health; 20% have average health. In other words, approximately only 30% of the people in the country may be said to enjoy average to excellent health. These figures are confirmed in part by the examination of the draftees of this country; approximately 50% of the first two million registrants who were examined, according to the earlier figures released, were found unqualified for general military service. However, 10% of these were


To prevent tragic LOSS
to our fighting men
NOW
MORE
THAN
EVER
CORYZA
REQUIRES PROMPT ATTENTION!
To reduce the staggering total of several hundred million man-hours of labor lost annually on the production front because of respiratory illnesses—hours that might have provided desperately needed materials of war for the fighting front—treatment of the common cold should start while still in the prodromal stage.
Pineoleum—applied intranasally as spray or drops—soothes and protects the dry hyperemic mucosa—and may (if administered early) help to abort the attack.
Later, Pineoleum with Ephedrine proves particularly valuable in helping to shrink engorged tissues—improving nasal ventilation, and relieving the sense of fulness of the head. Its adherent oily film is calculated to lessen the danger of contagion, and assist the recuperative process.
PINEOLEUM
Reg. U. S. Pat. Off.
PLAIN OR WITH EPHEDRINE
for safe symptomatic treatment
of CORYZA
THE PINEOLEUM COMPANY • NEW YORK 4, N. Y.

Oh, boy! Look at my hands! They feel like kid gloves. They haven't been like this in a long time! I'm through using those strong gritty soaps . . . and those solvents from the shop, too!

I'll hand it to the boss, though. When I showed him what was happening to my hands, he put this pH6 in the washroom. And does it work! Really cuts the dirt . . . gets me out of the gate just as quick . . . and leaves my hands feeling like I just walked out of a beauty parlor.

Occupational dermatitis, responsible for the loss of more man-hours than any other industrial disease, often originates *right in the washroom.* Strongly alkaline and abrasive soaps and the industrial solvents used by workers to clean the skin are in themselves harmful to the skin . . . and at the same time predispose the skin to inflammation by industrial irritants.

Now, with pH6, it is possible to clean the skin just as quickly and thoroughly *without injury.* pH6 gently yet speedily removes dirty grease and oil, printing inks, solvents, salves, unset paint and other industrial grime which resists even harsh alkaline soaps. Its use leaves the skin clean, smooth and supple and causes no burning, dryness or cracking. It helps materially to reduce chapping and can usually be applied without stinging to normal hands which have been nicked and cut. For exceptional cases of ground-in grime, the cleansing action of pH6 is supplemented by the mechanical "wash-cloth" action of pH6 Non-Abrasive Scrubber.

SPECIAL DISPENSERS INDUCE REGULAR USE

To insure the use of these *safe* materials in place of harsh, harmful skin cleansers, Stepan engineers have developed special dispensing methods, designed for utmost speed and convenience. These special dispensers are adaptable to all washroom conditions and are also available for use in office or clinic. Write today for *free samples* and circular with complete technical data.

STEPAN

REG. U. S. PAT. OFF.

*Many factory workers have a skin condition which we term "Factory Hands" ...raw, red defatted hands which cause discomfort and embarrassment. If unchecked this irritation may result in dermatitis.

pH6

TRADEMARK

for "Factory"* Hands

a new kind of industrial skin cleanser which:

1. **Cleans hands quickly and thoroughly.**
2. **Will not harm the skin.**

THE STEPAN CHEMICAL COMPANY · 1353 North Branch St., Chicago (22), Ill.

DON'T LET MINOR INJURIES BECOME MAJOR PRODUCTION PROBLEMS

NEW-SKIN is also recommended in the control and treatment of poison ivy dermatitis... as a protection against blisters, calluses, cast irritation, post-operative area infection.

This new size bottle exclusively for professional and industrial use.

Treat them quickly with NEW-SKIN ...reduce time losses from accidents

When minor injuries are treated promptly with NEW-SKIN Antiseptic Covering, loss of time is reduced to a minimum. NEW-SKIN protects cuts, burns, abrasions from dirt and dust, lessens danger of infections.

NEW-SKIN diffuses evenly, smoothly and "gives" with muscular flexation, without impairing its function.

The superiority and utility of NEW-SKIN Antiseptic Covering in protecting against contamination recommends its use in clinic, office and home.

For greater convenience and economy NEW-SKIN is now available in a new, larger . . . 8 ounce . . . bottle for professional and industrial use.

NEWSKIN COMPANY
882 Third Avenue Brooklyn, N. Y.

NEW-SKIN

8 oz. 75¢

Other New-Skin sizes at all drug stores—1 dram, 15¢ —½ oz. 30¢—1½ oz. 50¢.

disqualified for lack of educational qualifications. The experiences in the Canadian Army reflect those of the United States. Only 56% of the Canadian recruits were found suitable for any type of military warfare. Twenty per cent of them were totally unfit and the remaining 25% were considered to have sufficient physical stamina to serve in Canada or behind the lines.

—From an Editorial, "The Science of Health," in *New Orleans M. & S. J.*, December, 1943.

On the Safety Front

AN INTENSIVE campaign to reduce industrial accidents will be carried out by the Industrial Health and Safety Section of the Labor Production Office, in cooperation with the technical staffs of other Federal agencies. Over-all policy guidance will be provided by a National Advisory Committee representing A.F.L., C.I.O., U. S. Chamber of Commerce, National Association of Manufacturers and National Safety Council. A five-point plan of action, developed by the Advisory committee, summarizes minimum steps to be taken: (1) "The committee recommended that the Industrial Health and Safety Section, in conformity with agreements reached with the Federal agencies having operational authority and technical staffs, should bring to the attention of such Federal agencies problems of industrial health and safety which are interfering with war production and which have been brought to the attention of the Industrial Health and Safety Section through the channels of the War Production Board, and that the Industrial Health and Safety Section should enlist the cooperation of such Federal agencies, labor and management in solving such problems. (2) The committee directed the Industrial Health and Safety Section to establish procedures to assure the carrying out of remedial action suggested as a result of investigation by said agencies. (3) The committee directed that the Industrial Health and Safety Section attempt to promote more intelligent and widespread acceptance by labor of its responsibility in the health and safety field. In this connection it was felt that top labor officials should be contacted immediately and their support and approval of an active campaign among labor unions be secured. (4) The committee specifically urged that the Industrial Health and Safety Section help promote the establishment of plant labor-management committees on health and safety. This is to be done wherever possible in conjunction with established labor-management committees, but it was felt to be vital that health and safety committees not be closely allied with committees dealing with wages and hours or other grievances. (5) The committee recommended that the Industrial Health and Safety Section assist in the establishment of classes on health and safety in cooperation with the U. S. Department of Labor and the U. S. Office of Education, and assist in the dissemination of literature prepared by Federal and other agencies interested in industrial health and safety."

Institute of Industrial Health

WAYNE UNIVERSITY, Detroit, has a project under way to create a $50,000,000 Medical Science Center to be built around Wayne University's College of Medicine. Under the auspices of the board of directors, the proposal involves the erection of a dozen buildings, including a library of medical sciences, new buildings for the schools of medicine, dentistry, pharmacy, and nursing and allied subjects, an institute for graduate study and an institute of industrial health. Emphasizing the latter, *J.A.M.A.* (in "Current Comment," January 8) says: "The population and characteristic industries of the city of Detroit unquestionably make it an excellent location for a great medical center and particularly for an institute of industrial health. The advances of modern medical science make necessary renovation and rebuilding of laboratories. The need for a medical center in Wayne County has long been recognized. A 53-acre site has been earmarked adjacent to the hospitals and

KEEP 'EM HAPPY

KEEP 'EM HEALTHY

WAR WORKERS ENJOY TAKING ULTRAVIOLET BATHS THAT HELP KEEP THEM *ON THE JOB!*

The Hanovia Lighthouse Ultra-violet Lamp is an efficient time-saving, effective ultra-violet generator for group irradiation.

*Tests have proven ultra-violet one of the best and most dependable mediums for reducing absenteeism resultant from common ailments.

*Results of these tests available upon written request.

Send for Free booklet, "FITNESS IN INDUSTRY"

Address - - Industrial Solarium Dept.

HANOVIA CHEMICAL & MFG. CO.
NEWARK, N. J.

World's largest manufacturers of Ultra-violet Equipment for the Medical Profession and Industry.

This Lighthouse has been created for the ultra-violet irradiation of groups of persons. It has been designed to stand upon the floor in the center of an area about twelve feet in diameter where employees can walk or stand about the lamp at an average distance of five feet. Fifteen persons can be accommodated at one time at five feet distance ..the ultra-violet application involving only a few minutes.

THE LIGHTHOUSE IS STURDILY BUILT, EASY AND ECONOMICAL TO INSTALL, MAINTAIN & OPERATE

Rx DESITIN OINTMENT

The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF

Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.

DESITIN CHEMICAL COMPANY

70 SHIP STREET PROVIDENCE, RHODE ISLAND

medical office buildings of Detroit, and a special non-profit corporation has been developed to raise the necessary funds and to guide the development of the new institution. The first unit—namely, the hospital—is to serve patients requiring public assistance and will be erected by Wayne County. No doubt the city and state will find it convenient to develop their medical care program in relationship to this medical center. Unique, however, is the proposed institute of industrial health. A few of our great universities now offer courses in this field, and many of the state medical societies, led by the Council on Industrial Health of the American Medical Association, have provided study in industrial health. Detroit is recognized as an industrial capital. Many of its great industries have already developed units in preventive and industrial medicine which have contributed to research and progress in this field. The concept of an industrial health institute as a part of a medical science center deserves all the encouragement that the medical profession can give."

Costa Rica's Code

THE new Costa Rican labor code was enacted August 26 to resolve conflicting claims of owners, workers and consumers and put the nation's industrial relations on a permanently harmonious basis. It specifies the rights and duties of all parties concerned and provides for enforcement in separate labor courts whose operation is called "rapid, straightfor yard and sovereign over all the clamor of groups in every sector of the national economy. Its dominant note is that no individual or group owns Costa Rica. Everyone is under the law, and the law is not only of the people and by the people, but for the people. The interests of groups may differ. There will always be clashes of opinion and attempts at the use of force, but the whole people will give its decision through its government and its appropriate channels of expression. Ever in mind is the goal of economic democracy, the step beyond political equality and social harmony by which the right of everyone to work, to own, to improve his lot and to find security is recognized and upheld. The aim of this code is freedom in a productive economy. There are no tyrants under the system. The powers of ownership and of collective bargaining are held in check, just as their respective rights are guaranteed." In general, the law's 614 articles deal with underlying principles of industrial relations: contracts and labor agreements; hours of work, days of rest and wages; protection of workers at their employment; industrial and labor organizations and their administration; special labor courts; industrial and labor conflicts; public servants and government agencies, and pertinent responsibilities and penalties. The new code is tied in with Costa Rica's social security laws and similar legislation. Among specific provisions, the law requires industrial and labor organizations to incorporate for the common good, with assets, liabilities, schedules of payment, methods of administration, by-laws and officers listed in the statement of incorporation. All important decisions affecting industrial or labor relations must be filed with the Council of Labor and Social Provision, a government agency. Under the law, labor unions may engage only in activity of a social or economic nature and may compel nobody to join or remain in the union against his will. A union's corporate acts in violation of the law are punishable by fine unless injury to property or personal rights is involved, when the criminal laws become applicable. On the other hand, a union's assets are exempt from taxation and all members are legally bound by any decision of 60% of the membership, arrived at by secret ballot after free and open discussion of points at issue. Minimum wages are fixed and periodically revised to conform to fluctuations in the cost of living, and owners are restrained from forcing employees to leave a union, buy in specific stores, vote for a particular party or modify their religious beliefs. Where a conflict arises between labor and management, owners are required to hear the claims of employees if more than one-third of them are union members. If no agreement is reached within 30 days, either party may appeal to a labor court, separated from the regular judiciary system. As a rule, however, the conflicting parties first meet through committees

Simple to prescribe

A COMPLETE UNIT FOR APPROVED CONTRACEPTIVE TECHNIQUE

provides for patient comparison of Jelly and Cream (no extra cost)

The Koromex Set Complete contains in a handsome case:

1 H-R Diaphragm with special pouch

1 Koromex Trip Release (takes all size diaphragms)

1 Tube Koromex Jelly (higher lubricating factor)

1 Tube Emulsion Cream (lower lubricating factor)

1 Set Dickinson-Freret Fitting Charts

Price of Koromex Set Complete is only that of the Koromex Diaphragm and Koromex Trip Release Introducer. Attractively packaged with removable label. To prescribe, just write "Koromex Set Complete" and state size of diaphragm.

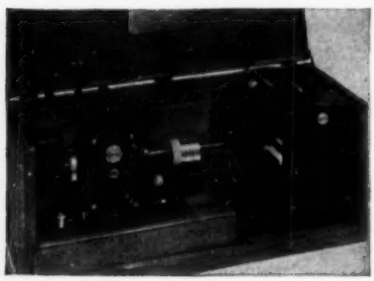
Holland-Rantos Company, Inc.

Write for literature

551 Fifth Avenue, New York 17, N. Y.

I AM AN AMERICAN

My health and well being are of vital importance to the entire nation. My heart *is* the heart of America. Its condition determines my ability to continue the tremendous production of goods, food and equipment so vital to the war and home front alike.



THE "SIMPLI-TROL" PORTABLE MODEL. MOBILE AND STATIONARY MODELS ALSO AVAILABLE

With the human heart playing such an important role in these strenuous days, no physical examination can be considered complete without an electrocardiogram. The Cambridge Electrocardiograph is the instrument of the discriminating Cardiologist. The unquestioned accuracy of its records, its dependability and simplicity of operation make it the natural choice in private practice, hospitals and industrial medicine.

Send for descriptive literature

BUY WAR BONDS

CAMBRIDGE INSTRUMENT CO., Inc.,
3732 Grand Central Terminal, New York
Pioneer Manufacturers of the Electrocardiograph

in an effort to find a solution to their differences. If no solution is forthcoming, a process of conciliation or arbitration may be ordered by the labor court, with the results of arbitration binding on all parties. If no agreement is reached, however, workers are allowed 20 days in which to post notice of a strike. The law defines a legal strike as a stoppage of work agreed to and executed peacefully by three or more employees, with the intention of bettering or defending their common and social interests, after at least 60% of the workers have agreed to this step. A strike is considered a temporary suspension of contract between labor and management, and no retaliatory action may be taken against employees after a strike has ended. Sympathy strikes and strikes among public servants, agricultural workers, herders, foresters, transportation workers while in transit, and hospital workers are banned. Other provisions of the law include two weeks' vacation with pay for all workers; pre-natal and post-natal leave for women; free day-nursery service for children in establishments employing more than 30 women, and workman's compensation for injury or death during employment. Workers may be discharged for slovenly work, absenteeism, personal attack, damage to property, or impairing the morale of a shop.

Medicine at the Crossroads

THERE are some very practical things for us to do. In front of us are held up certain bogies and scarecrows. Attempts to organize economics in medicine cannot be stopped by calling names. I have recently had a considerable experience with government. I have learned to know what is called the government bureaucrat. He is an honest, effective citizen, but I have lived and slept with him for four years and have become afraid of him in the field of medicine. We are fortunate in this country in that our Federal government has for the most part in its one hundred and fifty years of history not encroached upon public education and personal health. These have been under the control of the states. Education has been put in order, has been supported and organized under the immediate control of state and local governments. Personal health has not been. The relationships of the Federal government to public health have been carried on with due regard to the rights of the states. If there is to be anything done by the government in the matter of the costs of medical care it should be done by the smaller units of government and not by the Federal government itself. Each state and each community is different from the others. The conditions in California are as different as can be from those in Mississippi. What might be successful in Mississippi cannot apply here. We must take up the situation where we find it today. Each community has in it so many physicians, so many hospitals, private or public, and so many services. These form starting points for any future programs.

—From an address by RAY LYMAN WILBUR, M.D., at the 1933 meeting of the California Medical Association, printed in *California & Western Medicine*, May, 1933, and included in DR. WILBUR'S book "The March of Medicine," published by Stanford University Press, 1938.

Waivers and Liability

THE Commission for the Study of Occupational Diseases in Relation to Workmen's Compensation Act Coverage has recommended to the General Assembly that any legislation broadening the act to include occupational disabilities also should specify that employees who have suffered such ailments previous to the passage of the extended act be required to sign waivers which would free the employer from liability for coverage. Although there have been objections to the adoption of the waiver procedure, on the grounds that it would result in placing at a disadvantage an employee unfortunate enough to have suffered an occupational dis-

To Prevent or Eliminate Infection in *Industrial Injuries*

Azochloramid preparations have proved valuable in treating the traumatic wounds of industry as well as those encountered among our armed forces. The reduced healing time and shortened period of hospitalization effected by prompt control of infection is a welcome contribution to greater industrial efficiency. The various forms of Azochloramid provide ready adaptability to the task at hand.

For antiseptic dressings and packings that remain moist

SOLUTION OF AZOCHLORAMID IN TRIACETIN 1:500

For direct application to granulating wounds

OINTMENT OF AZOCHLORAMID 1:1000

For lavage, wet dressings, hot soaks and compresses

SOLUTION OF SALINE MIXTURE OF AZOCHLORAMID (aqueous, prepared from powder or tablets)

and **SOLUTION OF SURFACE ACTIVE SALINE MIXTURE OF AZOCHLORAMID (aqueous, prepared from powder)**

Azochloramid preparations are *Bactericidal*

—in dilutions non-toxic to tissue

—over prolonged periods

—in the presence of pus and necrotic tissue

They are the most stable of all chlorine bactericides

They are strongly deodorant

Available through your usual source of supply

QUOTED FROM INDUSTRIAL MEDICINE—

"In our plant hospital we have used the 1/500 solution in triacetin, routinely in wounds as a prophylaxis against infection. After two and one-half years of experience, we are convinced that in any raw surface where infection is threatened, or even possible, the daily dressing by gauze moistened in the above preparation is a sure guarantee against suppuration. This insures healing per primum, and lessens both temporary and permanent disability."

Antiseptics and Their Action, R. M. *Freeman*: *Industrial Medicine*, *February*, 1940.

Azochloramid
Reg. U. S. Pat. Off.
BRAND OF CHLOROAZODIN, U.S.P.

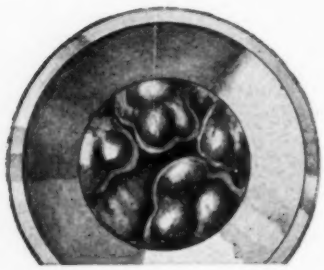
ARMY E NAVY
BUY BONDS

Detailed literature and samples upon request

WALLACE & TIERNAN PRODUCTS, INC.
BELLEVILLE, NEW JERSEY, U.S.A.

Relieve PAINFUL, PRURITIC SKIN AFFECTIONS

and



HEMORRHOIDS *with*

NUZINE OINTMENT

The many dermatologic conditions confronting the industrial physician at the present time comprise a real problem—associated as they are with decreased efficiency and loss of time.

The soothing, cooling, analgesic and decongestive action of the widely prescribed hemorrhoidal ointment—NUZINE—relieves the pain, burning, itching, thus preventing scratching and consequent spread of the infection.

In relieving the discomfort and irritation, Nuzine permits the rest and sleep necessary to continued efficiency.

Nuzine is supplied in 1-oz. tubes with special applicator and an easily removed label.

NUMOTIZINE, Inc.

900 NORTH FRANKLIN STREET, CHICAGO, ILLINOIS

ability prior to the adoption of additional coverage, without a provision for waivers Virginia industries would become involved in the complexities of accrued liability. In a few states where workmen's compensation acts have been broadened to include occupational diseases, if a worker is found to be suffering from such a disability at the time the act is changed, his employer is asked to assume the claim; or in the event the employee has changed his job and is found, as a result of a preemployment examination, to possess an occupational disability, his former employer may be asked to assume it. It is clear that if a man had been working for five or six employers, it would be extremely difficult to determine in which job he might have contracted an occupational ailment. Not only is the principle involved in the assuming of accrued liability of doubtful merit, but also there is no means by which the cost to industry can be estimated were a system of permitting workers to waive claims not adopted. Only an examination of all workers exposed to the dangers of occupational diseases would show how many individuals were afflicted and, therefore, would be in a position, with a broadening of the compensation act, to claim benefits for disabilities. Thus even though hardship may be done a few employees under a plan requiring the signing of waivers, that proposal at present offers the most efficient method of placing in effect a program authorizing compensation for occupational disabilities.

—*Richmond, Va., Times-Dispatch*, January 16.

Dermatitis

SAFETY engineers, watching the influx of new women workers into industry as a result of the war production program, have developed an intensive educational campaign to combat dermatitis. Cleanliness they stress as the most necessary safeguard. Only when the skin is opened in some way, they point out, can the bacteria that cause infections enter the body. So, wounds must be carefully tended to prevent infection. Since it is difficult to prevent occasional skin lesions, however, they stress the value of cleanliness as a preventive. Because women have higher standards of cleanliness and are anxious to keep their hands looking clean and soft, they guard against infections and dirt which men do not mind. It is this fact that has kept the incidence of dermatitis at lower levels than it was expected to reach as a result of the expansion of war industry. Although dermatitis as a general rule is not a harmful disease—in most cases, its major effect is discomfort—if not taken care of properly, it may result in development of a cancer. Certain mineral oils are especially dangerous in this respect, and have been known to bring about skin cancers. While dermatitis does not represent a major industrial hazard, it is a problem that contributes to dissatisfaction and unrest among war workers, and in intangible ways leads to loss of war production time and fairly permanent discomfort if not properly handled.

—*Springfield, Mass., News*, January 12.

Industrial Altruism?

KAISER, in his program, points to great profits which are bound to accrue in the operation of medical centers and he proposes that such profits be redirected into the enlargement and improvement of medical facilities throughout the country. Why should such altruism apply to profits derived from health care when history reveals to us that profits derived from industry did not establish protective guards for dangerous machinery, clean and comfortable rest rooms, lunch-room facilities, reasonable working hours, sick-leave benefits, vacation periods, retirement plans, and compensation for industrial accidents, until such time as legislative action occurred? What assurance do we have that the operation of health centers by industry with the employment of salaried doctors will not open up another field for corporate profits? In summarizing my remarks on the Kaiser type of medicine, I should like to point out to you that his plan is not new. That his idea of spreading the cost is not new. That his program is experimental and much too young to warrant a 158-page biography. That his health program at the time of de Kruif's book did not include the women and children

Zero Hour...

Black of night. A ringing phone . . . another call to arms. Instinctively, the doctor answers. For him it is the zero hour. An accident at a plant. A war-worker seriously injured. Once again begins a battle in the war that never ends . . . the crusade against disease . . . man's untiring enemy.

And science marches by the doctor's side . . . helps fight the foe with modern weapons. Take x-ray . . . a good example. Radiographs may save the worker's life . . . help chart a course that leads to successful treatment and a speedier recovery.

★ ★ ★

Today, the satisfactory diagnostic radiograph is the rule rather than the exception. One reason is that radiographers recognize that a sharp, contrasty negative depends to a large extent upon highly efficient intensifying screens. Screen care and replacement are important. Screens that are dirty, scratched or stained produce inferior results.

Examine screens regularly. Replace worn screens. Your dealer has an ample stock of Patterson Screens and will gladly supply you. A booklet, "Minutes that Matter," tells how best to care for intensifying screens. Write today for your free copy.

Patterson Screen Division of E. I. du Pont de Nemours & Co. (Inc.), Towanda, Pa.

DU PONT

REG. U.S. PAT. OFF.

ARMY E NAVY

Patterson Screens

Light the paths of X-Ray

4th WAR LOAN —LET'S ALL BACK THE ATTACK!

Better Things for Better Living . . . *Through Chemistry*

In Upper Respiratory Infections

COUNTERIRRITANT, ANTIPYRETIC, ANALGESIC

In coryza, pharyngitis, laryngitis, acute bronchitis, and influenzal infections, Baume Bengué produces prompt subjective relief and provides effective systemic therapy. Its distinct and welcome counterirritant action allays local discomfort and aids in creating a deep active hyperemia. Yielding methyl salicylate which is percutaneously absorbed, Baume Bengué produces an antipyretic action of value in acute febrile states. Its analgesic influence, brought about through systemic salicylization, relieves the associated joint and muscle discomfort. Of psychological benefit as well, Baume Bengué provides the patient with local therapy, satisfying a universal demand.

Baume Bengué

ANALGÉSIQUE

THOS. LEEMING & CO., 155 EAST 44TH STREET, NEW YORK 17, N. Y.

in his Richmond yards. That, in comparison with other medical centers and hospitals, his program is far from complete, since he does not operate a nurses' training school, a school for dietitians, a residency and fellowship program, laboratories for experimentation, the training of physical therapists, nor does his program give a history, because of its youth, of any developments toward the improvement of medical care. Many of the problems, paramount among which is the matter of crowding, may be seen daily at the Permanente Foundation Hospital in Oakland. Three beds frequently occupy the space allotted to two. This is not unusual in our present situation.

—From "Medical Practice of the Future As a Medical Administrator Views It," by ANTHONY J. J. ROURKE, M.D., in *California & Western Med.*, December

A Physician's Notes

ONE of the most common problems in medicine is that of the woman who ever since girlhood has had one puzzling illness after another: headaches, weak eyes, indigestion, constipation, abdominal pain, dysmenorrhea, palpitation, backache, bladder trouble, insomnia and aches and pains all over. This is the constitutionally inadequate type. Along with an unstable personality, some women have unsuitable thermostats. Recent studies show that tense, active persons normally have a temperature ranging around 99.3° F. They should stop worrying and throw away their thermometers. There is one type that needs serious consideration—the man who has been a previously healthy person, past middle age, and has just begun to fail and for the first time in his life has either become conscious of his stomach or gotten a pain, passed some blood, lost strength, weight or joy in living. This may all be due to an intracranial disorder. One of the commonest problems is that of arthritis. The patient fears he will be crippled. If he can be assured that he is not headed straight for a wheelchair, he will go away happy and probably be quite well." These keen observations and others that are known to the well-read industrial nurse might be typed and posted as constant reminders. They may help to overcome some difficult situations, especially when inadequate personalities are concerned.

—*Safety Engineering*, December, 1943.

Nurse Course

GRADUATE nurses of northeastern Indiana will be offered an opportunity to prepare for the growing field of industrial health service through a course in industrial hygiene to be offered at the Fort Wayne Extension Center of Indiana university. The course, which will consist of 15 class periods on Wednesday evenings at 8:00, was opened with a lecture by DR. LOUIS W. SPOLYAR, director of the division of industrial hygiene, Indiana state board of health. The course is under the direction of MISS AMY ERICKSON, instructor in nursing education at Indiana university.

—*Ft. Wayne Journal-Gazette*, January 9.

Vascular Complications

I WOULD like to point out that industry can use individuals, suffering from peripheral vascular disease, that it is using many without being aware of it, and that the physician should be on the alert to discover such disease by careful clinical observation. When such an individual is injured, certain principles of therapy must be observed. The physician must also recognize peripheral vascular disease as a result of the hazards and accidents of industry.

—From "Peripheral Vascular Disease and Industry," by A. WILBUR DURYEE, M.D., in *West Virginia M. J.*, January.

Occupational Diseases

ONLY two or three out of every one hundred compensated cases is an occupational disease case, according to three-year summaries of the Wisconsin Industrial Commission and the New York State Department of Labor. Compensation paid on occupational diseases amounted to 2% of all compensation in New York State, and 4% in Wisconsin. The average occupational disease award was more than half again as great as the average award for other cases. Excluding dermatitis, the average occupational disease award is two and a half to three times the average accident award. Dermatitis accounted for almost half of the cases in both of the two states.

—*Industrial Safety Review*, National Safety Council.

HEMATINIC PLASTULES*

LOOK AT THE BLOOD

*REG. U. S. PAT. OFF.

● Today more patients than ever may well be suspected of being anemic.

So, it has become more important than ever to—"Consider the blood."

When check reveals hypochromic anemia, the most important step to take is to see that the patient's blood is supplied quickly and efficiently with iron.

The iron supplied in Hematinic PLASTULES is *ferrous iron*—recognized as the ideal form for quick, thorough assimilation and conversion into hemoglobin. It *stays* in this form because it is hermetically sealed in soluble capsules that prevent oxidation.

And, as Hematinic PLASTULES quickly dissolve in the stomach, the ferrous iron in semi-fluid state is immediately ready for assimilation.

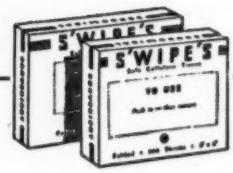
A Wyethical of The Bovinine Co., Chicago, Division WYETH Incorporated, Philadelphia.

DIVISION *Wyeth* INCORPORATED

S'WIPE'S*

*TRADE MARK REG. U. S. PATENT OFFICE

Cellulose Wipes In Boxes . . . In Bulk



Flat sizes, Bulk Packing: 5 x 6" and 5 x 9".

Folded sizes, Bulk Packing: 4 x 6", 5 x 6", 6 x 6" and 5 x 9".

Flat sizes, Boxed: 5x 6".

Folded sizes, Boxed: 4 x 6", 5 x 6", 5 x 9". Various packings as to sheets per box and boxes per carton.

Your Dealer can give you details or write us for price list showing Dealer's List prices.

Product of

THE GENERAL CELLULOSE CO., Inc.

GARWOOD, NEW JERSEY

Member, American Surgical Trade Assn., Hospital Industries Assn. and Nat'l Assn. of Mfrs.

The Future of Nutrition

EXPERIMENTALLY established facts and principles of nutrition must be applied if they are to improve the health of the nation; they must be translated into practice. It is an encouraging sign that so many people have attended nutrition classes sponsored by the American Red Cross, the Office of Civilian Defense, and other agencies. More of such projects should be launched and more and better prepared leaders are needed to conduct them. We should be able to look to physicians in the general practice of medicine for such leadership, but unfortunately the average doctor knows too little about the fundamentals of nutrition, not to mention their application. Often he is only too happy to refer nutritional matters to the dietitian, sometimes with a superior air. Suggestions have lately been made to improve this state of affairs and they should be put into practice, generally. Perhaps they cannot be, at the moment, because doctors are hard pressed and so are students of medicine. It is to be hoped that accelerated programs of instruction will be abolished at the earliest occasion; education is a process of assimilation and like all digestive processes, it requires time.

—*Nutrition Reviews*, January.

But Does It?

THE Wagner-Dingell bill proposes to set up a nation-wide system of health insurance (not socialized or government medicine), by means of which covered employees in industry would receive medical care from physicians of their own choosing, plus hospitalization if necessary, and some small sums in lieu of wages during the duration of their illness. The bill also proposes to coordinate all the county and state medical aid programs which now provide doctors, medicine and some hospitalization for the indigent who are unemployed. Every nation in the world has some variety of health insurance indicating a universal need. Under the circumstances, realism suggests that we do not dismiss the proposal merely as a New Deal innovation, nor berate it as "ever-increasing bureaucracies and government controls," as the Chamber of Commerce of New York State does. We must grapple with the problem, see what sound suggestions industry might make to meet the situation and lay plans accordingly. There is no reason why the administration should be permitted to have the ball and run the field with it.

—Editorial in *Chicago Journal of Commerce*, January 4.

Industry the Key

INDUSTRY cooperation is the master key to a full rehabilitation program, as essential to it as sunlight is to green nature. When labor is plentiful the natural inclination of employment managers is to by-pass the sub-normal and pick only the best, on the assumption that it is the most productive. When labor is tight, as it is at the present time, all the manpower that can be found or salvaged is needed, and this is a good time in which to demonstrate to all parties concerned the value of a well-planned rehabilitation program. Workers who are sub-normal in some respects, in that some faculty is impaired, make even better producers in some industries than those who rate high in physical fitness, because of an awareness that makes them extra careful and industrious. That fact has been well demonstrated by experimentation.

—From "Worcester Blazes Promising Trail for Returning Soldiers," in *Industry*, December, 1943.

Physicians Must Be Informed

EVEN though a physician does not limit his practice to industrial medicine, he will be much better able to keep his fellow men working in the war effort if he remembers to ask himself these questions: What is the occupation of my patient? Is this a case of acute abdominal pain, appendicitis, or lead poisoning? Is this acute pulmonary edema due to heart failure, or is it an oxide of nitrogen intoxication? Is this severe anemia, pernicious anemia, or is it benzene poisoning? Is this a case of jaundice or acute Bright's disease, ethylene dichloride or carbon tetrachloride poisoning? As long as we have industry, we physicians must be informed as to the poisons of industry. We must be familiar with the technics and hazards of industry so that we may be forewarned. We must mingle with the worker and the engineer in their work places if we are to prevent the suffering and disability which may well prolong the war. We must remember that

Cuticura Soap and Ointment
world-known for relieving externally
caused skin irritations . . .

NOW EXTENSIVELY USED TO HELP COMBAT INDUSTRIAL DERMATITIS

CUTICURA SOAP is neutral, mildly medicated and emollient. Carefully made of the finest quality ingredients, its gentle cleansing action helps PREVENT irritation as well as aids RELIEF when used in combination with world-known Cuticura Ointment.

CUTICURA OINTMENT contains many valuable ingredients including antiseptic OXYQUINOLINE and emollient sulphurated petrolatum, long recognized by the medical profession as effective therapeutic agents in the treatment of industrial dermatoses.

Free Samples of Cuticura Ointment sent to physicians on request.

POTTER DRUG & CHEMICAL CORP.
Dept. IM, Malden, Mass.

CUTICURA *Soap* AND *Ointment*

BEZON

"On the whole," says Carlson†, "we can trust Nature further than the chemist and his synthetic vitamins."

The nutritional response obtained with *natural* Vitamin B Complex therapy cannot be duplicated by any combination of synthetic vitamins, according to investigators.

BEZON depends on Nature for its components—it is *Whole Natural* Vitamin B Complex, concentrated to high potency from natural sources—no synthetic vitamin factors are added. Only *Whole Natural* Vitamin B Complex contains *all 22* B vitamins.

In prescribing BEZON, the entire Vitamin B Complex is assured—an important fact inasmuch as Vitamin B deficiencies tend to be multiple.

BEZON is the only *Whole Natural* Vitamin B Complex which contains one milligram of natural thiamine, two milligrams of natural riboflavin, together with all the remaining members of the B complex, concentrated in one capsule or two tabules.

Supplied in bottles of 30 and 100 capsules; 60 and 200 tabules.

Samples and literature available on request

†Carlson, A. J., Science, 97, April 30 and May 7, 1943

*Trade Mark

NUTRITION RESEARCH LABORATORIES · CHICAGO

BEZON *whole natural* VITAMIN B COMPLEX

TENEX
REG. U.S. PAT. OFF.

Takes the "itis" out of DERMATITIS

Send for Professional Samples of Tenex Liquid and Tenex Tar Cream

Without cost or obligation, we will be glad to send you free professional samples of Tenex Liquid and Tenex Tar Cream—to use on those cases of contact dermatitis which drain vital man-hours. Find out for yourself how successfully Tenex products prove for skin irritations of external origin and fungus infections. Tenex provides two-way help: a liquid to treat and combat; a cream to heal and protect.

Tenex Liquid contains
Chlorthymol
Menthol
Phenol
Thymol
Benzocaine
Oil Wintergreen
Salicylic Acid
Benzoic Acid

Tenex Tar Cream contains
Benzocaine
Menthol
Lanolin
Carbonis Detergens
with
Greaseless
Cream
Base

For Free Samples, Write today to
TENEX LABORATORIES, INC.
CEDAR RAPIDS, IOWA, U.S.A.
Manufacturing Chemists • Fine Skin Products

"STICK-PADS"
(Trade Mark)
D C M

The Elastic Adhesive Dressing Strip that is Ideal for Factory First-Aid

The Elasticity permits proper moulding when applied over joints.

They are specially treated to make them resistant to
OIL — GREASE — GASOLINE — WATER

Samples and prices on request

D. C. McLINTOCK CO.
104 Verona Ave. Newark 4, New Jersey

here, as in the practice of general medicine, we are dealing with the art of medicine and that there is no single step with which we can shortcut our study of the whole picture of disease. Our opinion must rest upon (1) appraisal of exposure of the worker to a possible poisoning, (2) a review of characteristic symptoms, (3) an analysis of our objective physical and laboratory studies, (4) correlation of the above with our own observation of the patient at work in his factory work place, (5) a survey of the readily available knowledge of the accumulated experience of the entire profession on this subject of poisons in industry, and (6) an accurate diagnosis and intelligent prescription with a minimum of complicated procedures when time, equipment, and the individual worker are precious and irreplaceable, now more than ever before at this particular moment of history.

—From "Medical Control of Poisons in Industry," by ELSTON L. BELKNAP, M.D., in *Wisconsin M. J.*, December, 1943.

Offer Accepted

WORKING CONDITIONS—eating facilities, medical services, health and injury hazards may become an active issue between organized labor and management in both contract negotiations and grievance discussions. That management may be confronted with demands for dust counts, blood examinations, better cafeterias, better first aid equipments and other services in the field of working conditions is indicated by independent moves recently taken by the United Automobile Workers, —CIO, largest union in the United States, and by the Ohio CIO Council, second largest state federation of CIO unions.

—Connecticut General's *"Notes & Quotes,"* quoting *Modern Industry.*

G. M. Rehabilitation

EASTERN AIRCRAFT has placed A. A. HENDRIX, director of personnel, in charge of its rehabilitation program. He believes the principal problem is "moral rehabilitation." He points out that transition from military to civilian life brings an "easy tendency to take advantage of the status as a veteran." He is firmly against coddling and insists that the job of his supervisory force is to put over the thought that the veteran is being helped to help himself. Eastern has gone into a new field in industrial medicine, industrial psychiatry, in charge of DR. G. A. EADIE, who heads a department distinct from that of the medical supervisor. Based on his conclusions a man's physical and mental handicaps, a job is selected. DR. EADIE follows up the experiences and has a dossier of case histories which will be helpful to other plants re-employing veterans.

—From an article by SILER FREEMAN, in *Detroit Times*, January 4.

Accidents

INDUSTRIAL casualties since Pearl Harbor (to January 1, 1944) are 37,600 killed—7,500 more than the military dead; 210,000 permanently disabled and 4,500,000 temporarily disabled—60 times more than the military wounded and missing. Injuries account for four times as many lost man-hours as strikes. Manufacturing has 50,000 workers absent every day because of accidents. Deaths and injuries on the job are occurring now at the rate of 270,000,000 lost man-days a year, the equivalent of the withdrawal of 900,000 workers for a full year from the production lines. Accidents cost employers $35 a year for every worker employed. In two respects these facts appear favorable, according to safety authorities: (1) Deaths are only two-thirds as frequent per 100,000 workers in this war as in the last. Contrasting the greater tasks and accompanying strains on industry of this war to the last, the lessened percentage of fatalities is even more striking. (2) The loss of life and limb would be incalculably worse if management, government, labor, insurance companies and safety agencies had not

Here's how to REALLY save

on blades discarded by the operating room

To throw away a blade which has served its turn in the operating room, is to waste much of its potential usefulness. Yet, to attempt to extend its surgical life unduly may dangerously depreciate operating standards.

By means of the X-Acto Knife, these blades can be reclaimed for heavy duty service in many hospital departments. They thus provide a knife that offers continuous cutting efficiency—*at no upkeep expense.* The small first cost of the handle (only one dollar) is the last one—yet it constitutes an investment from which the hospital can profit as long as used blades are available.

The X-Acto Knife thus serves as:

A Plaster Knife—One of the sharpest, sturdiest, and most effective plaster knives that could be desired; efficient for cutting gauze pads, cotton, etc.

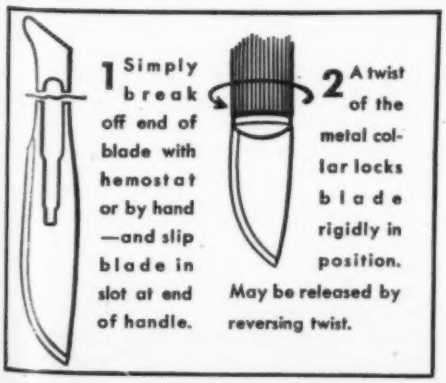
An Occupational Therapy Knife—A tool that has become standard for stencil cutting, model building, wood carving, and for all the arts and crafts.

A Laboratory Knife—Performs a multitude of useful functions in chemical or dental laboratory.

Your surgical supply house can take care of your requirements.

CRESCENT SURGICAL SALES CO., INC., NEW YORK, N. Y.

EASY TO USE X-ACTO *UTILITY* KNIFE


1 Simply break off end of blade with hemostat or by hand —and slip blade in slot at end of handle.
2 A twist of the metal collar locks blade rigidly in position. May be released by reversing twist.

FROM THE HOUSE OF

Crescent Surgical Blades

Invisible Covering

WHERE gloves cannot be worn and greasy ointments would interfere with the work being done—ENZO-CAL* provides the invisible protection so urgently needed these days.

In addition to its protective action, ENZO-CAL supplies prompt and effective antipruritic and healing qualities because of its contained calamine and zinc oxide in exceptionally fine, semi-colloidal subdivision with benzocaine.

Supplied in 1 oz., 2 oz. and 1 lb. jars.
Sample and literature on request.

ENZO-CAL

THE PROTECTIVE, SOOTHING, HEALING, ASTRINGENT CREAM

*Trade-mark Reg. U. S. Pat. Off

CROOKES LABORATORIES, INC., 305 EAST 45th ST., NEW YORK 17, N. Y.

been able to effect the most accelerated adoption of safety practices in industrial history. Although a cooperative safety program on a national scale has been under way since before Pearl Harbor, it has not yet begun to catch up with the needs of the production lines that have mushroomed to meet the war emergency. According to Verne A. Zimmer, director of the Division of Labor Standards of the Department of Labor and chairman of the National Committee for the Conservation of Manpower in War Industries, a majority of the nation's 100,000 war plants are operating without realistic and effective safety programs. The manufacturing industries have an average frequency rate of 20 lost-time accidents per million man-hours worked. This means 20 out of every 500 workers are injured or killed in a year. Such industries as mining, lumbering and construction are estimated to have a still higher rate. In hundreds of plants a persistent "will to safety" has brought about a frequency rate that can be considered almost the irreducible minimum—rates of one to five per million man-hours. It could almost be said that the accidents that happen are the ones that "have to" happen. In the figures for the country as a whole these companies compensate for those which are lacking in adequate safety controls.

—OWI Release.

More Quotes

FEW PERSONS realize that what is called 'a great social trend' is no more than the propaganda put out by the opponents of a free society to confuse, disorganize and disarm the defenders of that society. There is no such thing as an irresistible social trend. It only becomes so when everyone ceases to resist it."—PROF. HARLEY L. LUTZ, Princeton University..... FROM "Sickness Insurance in Europe," by J. G. Crownhart: "In its health service and sickness care aspects—(1) Sickness insurance is sold the public on the basis that it will perform a social service. Its required operation as an insurance institution defeats this purpose. (2) The fixation of premiums produces a situation in which the financial balance can only be maintained by ignoring the steady progress of medical science. (3) The beneficent intent of the legislation is accepted by the patient as a guarantee of a quality of service which the operation of the system makes it increasingly impossible to render. (4) The institution, as a trustee, feels that its obligation to preserve the funds for the possible future needs of the many now in good health is paramount to its duty to give the best possible care to the sick. This of necessity involves exercising of a wide measure of control of medical practice." . . . . "I HOPE the time never comes when the practice of medicine, or anything that has to do with it, has to come under government control. I think it would be a disaster to this country; it would be a disaster to medicine."—REAR ADMIRAL ROSS T. MCINTIRE, surgeon General of the United States Navy. "American medicine has been responsible for a state of health of the people unexcelled in any other country." —*J.A.M.A.*

Wisconsin Med. J., January.

Not So Good

ACCORDING to QUENTIN POPE, (in *Chicago Tribune*) the two-year old free national medical service in New Zealand is not doing so well. "Physicians back in New Zealand after years of service with the armed forces have been startled. One past president of the medical association described the situation to this correspondent as 'an awful racket.' An indication of what is happening was given manpower tribunals which determine whether or not drafted men shall serve with the forces. On several occasions officials have tipped newspapers that they meant to ventilate the manner in which some physicians were granting certificates to workers, declar-

For wartime working efficiency

Pluravit, the "different" multiple vitamin supplement, was developed especially for industrial workers.

The daily Pluravit ration is only one pellet per day per worker. Experience has demonstrated that this will effectively prevent vitamin deficiency. As a result workers not only enjoy better health but are likely to find greater enjoyment in working, so that production can be maintained at peak levels.

Available in convenient, sanitary cellophane pouch containing 7, 14 or 28 pellets (for one, two or four weeks' supply), in bottles of 30, 100 and 1000 pellets.

One **PLURAVIT** *pellet contains:*

Vitamin A	5000 U.S.P. units
Vitamin B_1	2 mg. (666 units)
Vitamin B_2	2 mg.
Vitamin B_6	0.5 mg.
Calcium Pantothenate	1 mg.
Niacinamide	20 mg.
Vitamin C	50 mg. (1000 units)
Crystalline Vitamin D_3	1000 U.S.P. units

WINTHROP

PLURAVIT

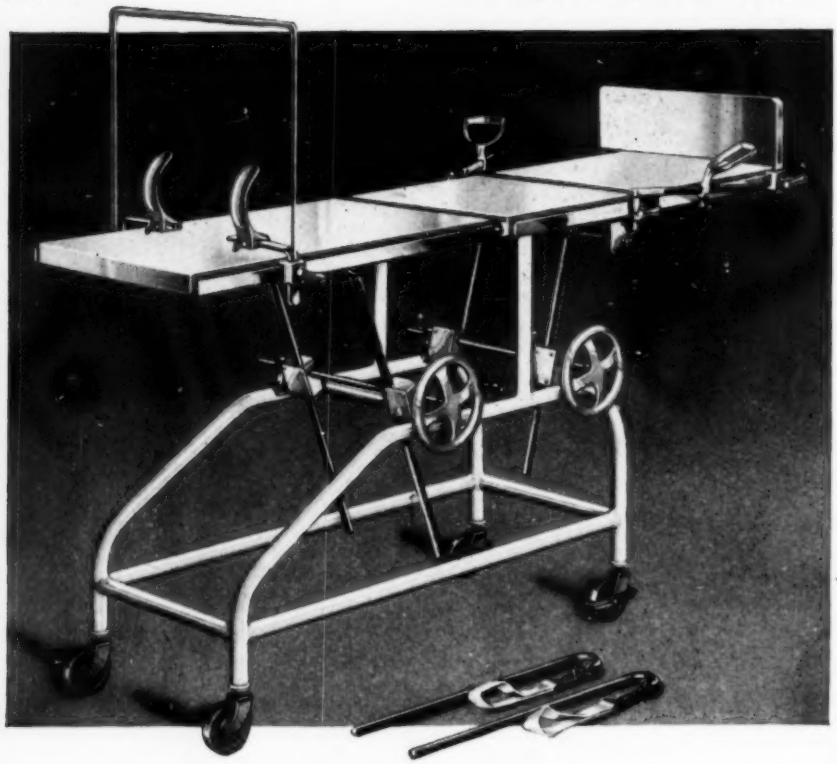
Reg. U. S. Pat. Off.

Winthrop Chemical Company, Inc.

INDUSTRIAL DIVISION

NEW YORK 13, N. Y. WINDSOR, ONT.

ARMY E NAVY



Regular $175.00 Universal Operating Table

Only $95.00 F.O.B. St. Louis

- Heavy steel pipe, electrically welded, frame
- Steel top measures 20 by 72 inches (78 inches extended)
- Finished in baked-on white Duco enamel

$107.50 F.O.B. Los Angeles

Ideal for dispensary, clinic or first aid room

Thousands of these tables were ordered by the medical department of the U. S. Army at the beginning of the war. Now, due to realignment of purchase schedules, the army has found that a few hundred more tables were ordered than required by the armed services and so, we were given permission by the army procurement officials to offer these extra tables to our regular customers. The savings is yours.

Truly universal, this table is practical for many types of work. Most desirable positions for major and minor surgery, G-U, gynecological, rectal, and ear, nose and throat work are easily obtained.

Made to rigid government specifications, the quality of materials and workmanship in the Universal table is assured. Detailed description will be sent on request.

BP6459½—Universal Table, complete with leg holders, heel stirrups, shoulder supports, anesthetist's screen, cloth panel and leg holder straps.
F.O.B. St. Louis ..... $ 95.00
F.O.B. Los Angeles 107.50
BP6668—Set of Leatherette Covered Cushions 10.00

Sharp & Smith Hospital Division
A. S. ALOE COMPANY
St. Louis, Mo. • Los Angeles, Cal.

ing they were unfit for proposed jobs. In addition the Wellington Manufacturers' association recently charged that certificates issued covering ability to perform set jobs 'were often unsatisfactory and were issued when doctors were not in a position to formulate any opinion on the nature of the job involved.' Workers have been told they must consult physicians familiar with their medical histories or certificates will not be accepted. Since the national health service became free, doctors have been so heavily dated up in their consulting rooms there have been instances of them refusing to visit cases which have proved fatal. Cases cited by Dr. Newlands include three physicians who, he said, were making incomes equivalent to 73 attendances on patients on every day of the year. If a doctor worked 10 hours a day, he said, this meant he still had to see seven people an hour exclusive of his traveling time. This situation of over-consultation and markedly higher earnings for diminished service is generally admitted by medical men. It was one of the developments anticipated by the National Medical association when the free doctor plan was proposed. It has apparently weighed with Prime Minister John Curtin's Australian nonparty committee on medical care which recently reported to the Australian house of representatives that such systems as that in operation in New Zealand 'offered no solution to the problem and were subject to abuses which were very difficult to check.'"

Research Study

NEW YORK University, Division of General Education, Center for Safety Education in cooperation with the Institute for the Crippled and Disabled, is sponsoring a research study, conducted by Tobias Wagner, entitled "Work Efficiency and Accident-proneness of Physically Disabled Workers in Industry." This is designed to formulate and establish efficiency standards with respect to the ability and skill of physically disabled persons to perform a variety of industrial jobs. Its practical value will result in the systematic compilation of job standards and demonstrated personal characteristics of the physically disabled that will aid in increasing the efficiency of programs of rehabilitation and training, supply scientific information for purposes of employment and placement of the physically disabled in industry, and give them the fullest opportunity to become self-sufficient and useful members of society. The need for such work is immediately recognized when one considers the predicted large number of returning war cripples, the 150,000 persons who each year become physically disabled as the result of disease or accident, and all of these added to the approximately 3,000,000 physically handicapped persons in this country at the present time.

—*Safety Engineering*, January.

"Ailing" Workers

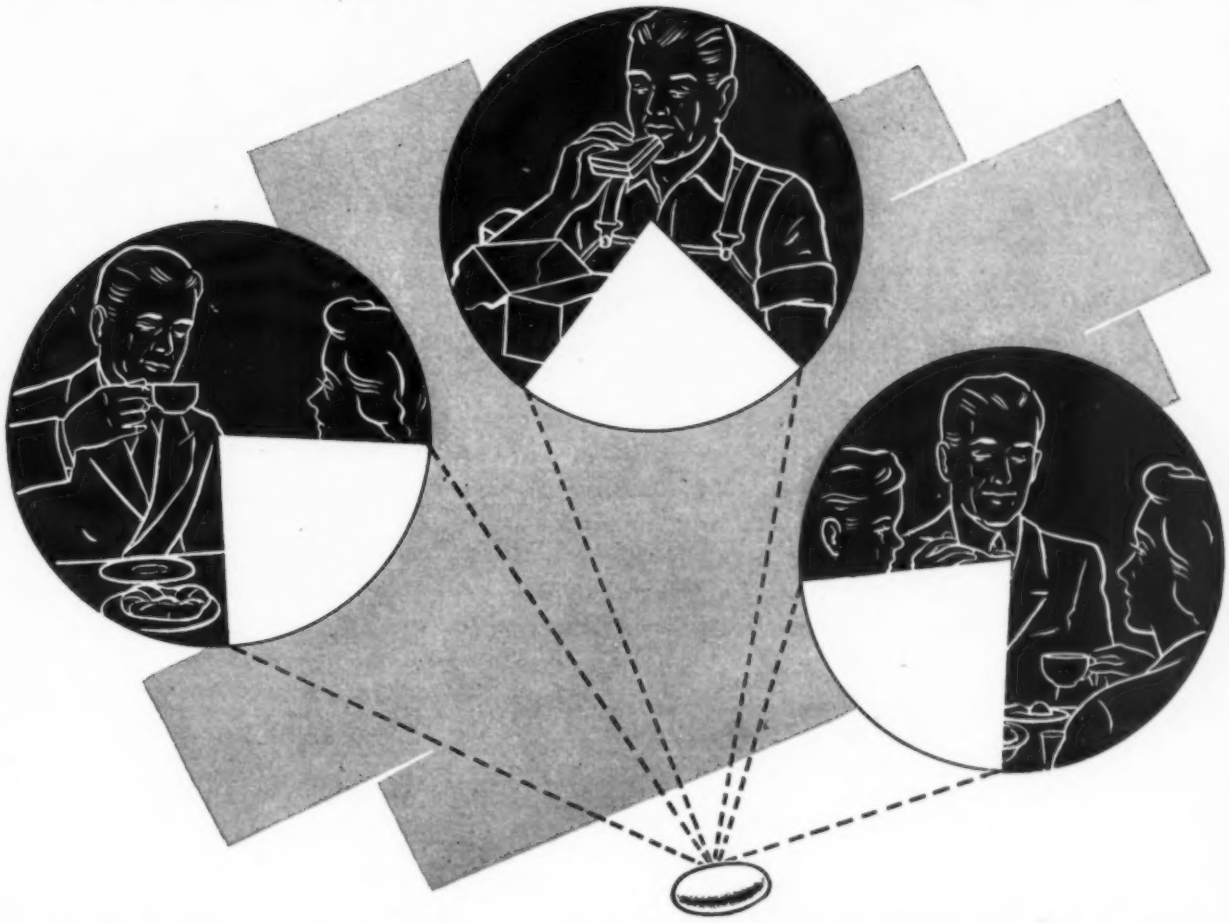
THE War Manpower Commission has disclosed that many workers who are seeking releases from jobs are presenting medical certificates that the work they are doing is deleterious to their health. Investigation has disclosed, says the WMC, that many of these workers have been employed a long time in their "deleterious" jobs and that their records show little absenteeism due to ill health. The commission therefore has requested physicians not to issue such statements unless positive evidence exists to support them. Where a doctor finds it desirable to issue a certificate he is requested to give specific reasons for it and to state what type of work is suitable for the person seeking a release.

—*Medical Economics.*

The Political Parade

CURRENT releases from the seat of power abound with strong words. Typical: "Seven government agencies are planning immediate and vigorous action to expand in-plant feeding organizations in the nation's war plants to cover an additional 5,500,000 workers. This action is in line with the recent instructions issued" by the President. Presumably the managements that have been trying in vain to get releases on cafeteria

TO FILL IN THE NUTRITION GAP



A Full Daily Vitamin Ration in One Small Tablet

Numerous investigations into the eating habits of war workers and other groups indicate that only 30% to 40% receive a nutritionally adequate diet.

With this new, highly potent dietary supplement you can provide an optimum daily intake of *all* the clinically established vitamins in *one small tablet*—

New PAN-CONCEMIN

Brand of Polyvitamin

TABLETS

Each small, convenient-to-take tablet contains:

Vitamin A	5000 U. S. P. Units
Vitamin B_1	3 milligrams
Vitamin B_2	2 milligrams
Vitamin C	30 milligrams
Vitamin D	800 U. S. P. Units
Niacinamide	25 milligrams
Calcium d-Pantothenate	2 milligrams
Vitamin B_6	100 micrograms

Pan-Concemin Tablets have distinct advantages over ordinary multivitamin capsules — in convenience, freedom from aftertaste, stability, and economy. Administration costs less than 3c a day per employe.

Pan-Concemin Tablets are available to industrial physicians in stock packages of 1000 tablets or in individual dispensing units to suit your requirements.

Write for sample, complete literature, and specimens of promotional material supplied free as an aid to establishing a vitamin supplementation program in your organization.

T. M. "Pan-Concemin" Reg. U. S. Pat. Off.

MERRELL

116th Year

THE WM. S. MERRELL COMPANY · CINCINNATI, U. S. A.

That is Ready Now...

Many objects that we live with promise to be improved—after the war. All of us will watch for these with great expectations. But the physician charged with the management of biliary deficiencies need not wait for one such that improves living. A lately bettered product of chemically pure substances for bile stimulation and replacement is at hand now. This is

DOXYCHOL

Composed of dehydrocholic and desoxycholic acids, Doxychol causes the washing of mucus and stagnated material from the ducts by markedly increasing the fluid bile. Of equal consequence it promotes the digestion of the fat portion of the diet and thereby gains energy for the patient.

These specific substances in one convenient preparation are available in Doxychol Tablets; in bottles of 100, 500, and 1000.

BREON

George A. Breon & Company

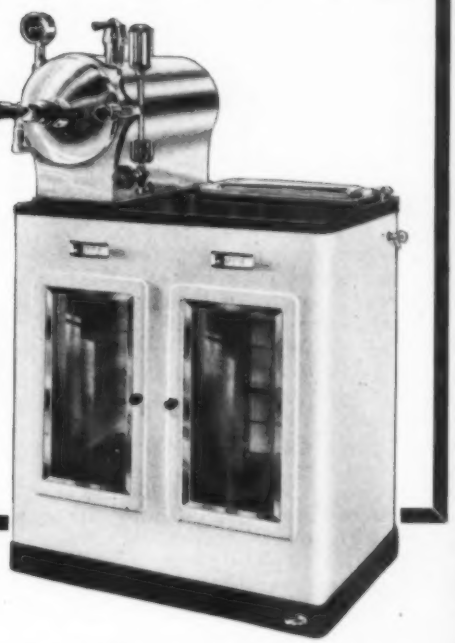
New York Atlanta KANSAS CITY, MO. Los Angeles Seattle

and restaurant equipment for this very purpose will now get them; presumably, also, the credit for the better feeding will go to the seven agencies. . . . THE War Manpower Commission is explaining the bases of the selective service legislation that isn't going to be enacted. . . . THE Federal Security Agency urges a "comprehensive national social security system" at 6% of pay; asserts "the present time is singularly auspicious." Senator Murray (D., Montana) echoes in a 4500-word speech concerning which *Chicago Daily News* editorializes: ". . . a perfect map of the mind of the politician seeking votes on the 'do-gooder' trail . . . the pinko patter that is the omnipresent hallmark of the intellectual poverty and economic illiteracy of the politician posing as public benefactor. This old mallarkey of pretending to give people things that the people have to pay for with their own money, is the characteristic 'pious fraud,' of the 20th century." . . . THERE are many digs at "reactionaries," "obstructionists," and "vested interests" in the "ouch" speeches from certain high quarters. Such things, however, have boomerang qualities. Some alert critic will point out, before long, that the "vested interests" —the only ones left, these days—are the government bureaus themselves, completely reactionary and obstructionist in that they want no change in their status except more power, and no interference with their tenure except that it become more "vested." The Federal Security Agency was created to administer, not to ballyhoo. And "social security" should stand on its own bottom. . . . NEW DEAL postwar planning is characterized, also editorially: "The economic planning of the New Deal is worthless because it is all based on the fallacy that the objective should be employment purely as employment, regardless of whether the employment produces anything useful. What this country wants after the war is steel and automobiles, and washing machines and new homes, and better laundry service and more convenient local transportation. It is those things that American industry is prepared to furnish, and to furnish in the largest possible volume, in the shortest possible time, and at the lowest possible cost. The kind of employment that produces these things is the employment that raises the living standards of the nation. The kind of employment that the New Dealers are talking about is that which will merely pile added burdens of debt on the people and make it increasingly difficult to produce the articles that better living conditions. The public works program is not likely to result in a high percentage of usefulness, because the projects, as 10 years' experience has demonstrated, are going to be allocated on a political basis and not on a basis of economic need." . . . THAT change of name for the New Deal brought to memory the following, from the immortal "Pilgrim's Progress": "The had them also to a place where they saw one *Fool* and one *Want-Wit* washing of an *Ethiopian* with the intention to make him white, but the more they washed him the blacker he was" . . . .

What Price Wages?

HIGH wages paid to war workers are luring many patients away from tuberculosis hospitals before they have regained their health and are also acting as a deterrent to newly diagnosed cases accepting early treatment, with the result that public health is jeopardized. This is undoubtedly one of the factors underlying the current decrease in the utilization of tuberculosis hospital facilities. One evidence of this decrease is that in the last few months there were about 750 vacancies for adults in all county, city, and state public tuberculosis hospitals in the upstate area. This represents 16% of the total beds available for adults whereas, under normal circumstances, only from 5 to 10% of such beds are unoccupied at any one time. These vacancies are significant, particularly in view of the fact that during the first 10 months of 1943 there were 50 more deaths and 252 more new cases reported than in the corresponding period of 1942. Of even greater significance is the fact that because of the magnet of high wages in industry fewer patients known to have infectious tuberculosis are currently isolated in hospitals than formerly. In 1941, an analysis of the tuberculosis cases

Is Your Hospital and First Aid Equipment Adequate?

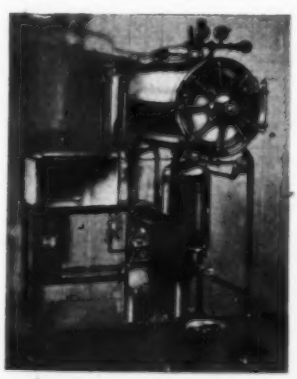


Are your Sterilizers up-to-date? Have they ample capacity for today's job? Are they efficient? Completely safe? How about operating lights? A really good light speeds the Doctor's work.

CASUALTIES on the production line today can be as costly as casualties in the field.

The responsibility of preventing any production let-down is in your hands. With plant personnel doubled or tripled, your present equipment may not be adequate for the job. Under any conditions, the chances are that you have a definite need for Castle Industrial Sterilizing Equipment and for Castle Lights.

Wire us the approximate number of cases handled daily by your First Aid Department. Let us recommend adequate equipment. We can make good deliveries on high priority orders.



Castle Sterilizers range in size from the smallest portable electric 16" boiler to a battery for a city hospital. Standardized unit for various size plants are available.

CASTLE 669—*For the industrial physician's office*

Has 8" x 16" autoclave with CAST-IN-BRONZE construction. Entire body, ends and base cast in one piece of lifetime bronze. Recessed 16" CAST-IN-BRONZE Instrument Sterilizer with silent oil-check foot lift. 9" x 20" black porcelain finished table top. Spacious double cabinet with plate glass doors and shelves. "Full-Automatic" throughout.

CASTLE LIGHTS

Castle No. 1 Spotlight provides ample, cool, color-corrected, glareless, shadow-free light wherever it is needed most. Although operator's head may be held directly in front of light, a complete spot of illumination will still be projected. Unexcelled for locating foreign bodies in the eye. Completely adjustable, on tripod caster base or wall mounting. Other Castle Lights include Major Operating Lights. Lights for Improved Over-All Illumination and Emergency Power Units.

CASTLE 1150

Combines 16" x 20" Pressure Dressing and Utensil Sterilizer, 3 gal. Pressure Water Sterilizer, 3 qt. Water Still, and 17" Instrument Sterilizer with foot pad lift. Affords full hospital sterilization in one compact, efficient unit.

WILMOT CASTLE COMPANY

1161 University Avenue, Rochester, N. Y.

residing in the areas under the supervision of the district state health offices showed that of those patients known to have tubercle bacilli in their sputum, about 60% were receiving hospital care and treatment. A similar study in the summer of 1943 revealed that only 40% of such patients were hospitalized. For these people with active tuberculosis, even light work is very apt to be detrimental. The least possible effect of working is retardation of eventual recovery from the disease but, for the majority, this ill-timed return to work represents nothing short of gambling with death. The essence of treatment of tuberculosis is adequate and continued bed rest together with the auxiliary modern medical and surgical measures which are available in tuberculosis hospitals. The patient with active tuberculosis who either does not accept this treatment or discontinues it in order to work in industry subjects himself to the extremely harmful influence of physical stress and thereby invites the risk of unfavorable outcome of the disease. In addition to the dangers to the patients themselves, such voluntary departures from hospitals of individuals with communicable tuberculosis mean that their associates in the home and at work are again exposed to the disease. This added hazard is particularly unfortunate at this time in view of the potential extra risk of tuberculosis resulting from the dislocations of life in wartime. Thus, although the desire on the part of patients with active, infectious tuberculosis to stay out of hospitals and engage in gainful employment is understandable, it is a doubly dangerous and short-sighted undertaking. The resulting potentialities of lasting and irreparable physical damage and of transmission of the disease to others far outweigh in importance any temporary material benefits which may be gained. The knowledge of those dangers should be brought to the patients concerned and every possible effort exerted to reverse this unfavorable trend. The State Department of Health is taking steps to bring these facts to the attention of physicians, public health workers, industrial leaders, and others in order that this serious situation may be corrected.

—ROBERT E. PLUNKETT, M.D., in New York State Department of Health's *Health News*, December 20, 1943.

TEN YEARS AGO in "INDUSTRIAL MEDICINE"

FROM the personal story of DR. HART E. FISHER, in "Who's Who in Industrial Medicine and Surgery," INDUSTRIAL MEDICINE, February, 1934: "Dartmouth, '06, and Northwestern University Law School, '07 and '08, only confirmed an early and abiding predilection toward medicine. And so he matriculated at Hahneman Medical College and Hospital, and in 1912 was graduated therefrom as M.D. Then, after a period as Senior House Surgeon at Flower Hospital, New York, he took up post-graduate work at the New York Post-Graduate Hospital. In 1913 he established himself in his own practice in Chicago.

"Early in this venture on his own he became affiliated with the Chicago Surface Railway Lines as an emergency surgeon. But soon the Elevated Lines wanted to install a medical department, and he left the street car company, and his own practice, to 'head-up' the new department.

"He saw a double-edged opportunity in this position. In addition to the call to pioneer in industrial medicine, there was the deep attraction of the human interest relations, not only with the employees but also with the public, which the new work involved. Experiences shoulder to shoulder with wielders of pick and shovel, in the handling of groups on railroad construction, and in dealing with the public had whetted certain administrative capacities to which the medical department of an urban railway ought to give maximum expression.

"So he started in, and among those results of his labors, his unflagging interest, the development of his administrative ability, and his 'voluminous' energy which will profit others as well as those with whom he works

ROUTINE URINALYSIS SIMPLIFIED • • } PRESENTING TWO IMPORTANT SHORT CUTS

Galatest
(DRY REAGENT FOR URINE SUGAR)

Acetone Test
(DENCO)

Acetone Test (Denco) goes hand in hand with Galatest (dry reagent for urine sugar) in further simplifying Routine Urine Analysis. Detects the presence or absence of acetone in urine in one minute. The color reaction is identical to that found in the violet ring tests and is equally easy to differentiate. A trace of acetone turns the powder light lavender—larger amounts turn it to dark purple. Acetone Test (Denco) is available in vials containing enough powder for over 125 complete tests, also in combination kits with Galatest.

Write for descriptive literature to the Denver Chemical Mfg. Company, 163 Varick Street, New York 13, N. Y.

Accepted for advertising in the Journal of the American Medical Association.

Acetone Test
(DENCO)
Galatest

A carrying case containing one vial of Acetone Test (Denco) and one vial of Galatest is now available. This is very convenient for the medical bag or for the diabetic patient. The case also contains a medicine dropper and a Galatest color chart. The handy kit or refills of Acetone Test (Denco) and Galatest are obtainable at all prescription pharmacies and surgical supply houses.

THE SAME SIMPLE TECHNIQUE FOR BOTH TESTS

1. A little powder 2. A little urine *Color reaction instantly*

"Pain kills like hemorrhage by exhausting vitality!"

Guillaume Dupuytren

Dupuytren — the great French surgeon — early recognized that pain is not only a symptom, but a pathogenic, destructive factor as well. This is especially true in hemorrhoidal conditions in which there is both pain and hemorrhage, and in which the venous engorgement is aggravated by the inflammatory reaction of the intensely irritated nerve endings.

The rationale of inhibiting hemorrhoidal pain by prolonged local anesthesia, so as to afford the calmed tissues an opportunity to retrogress to normal, is thus obvious. But practical experience is better than theoretical consideration. Since 1930, in many hundred thousand cases

RECTAL MEDICONE

has proved its therapeutic usefulness by . . .

1. Anesthetizing the Hemorrhoids
2. Arresting the Bleeding
3. Promoting Healing

enabling sedentary and industrial workers to maintain their mental and physical efficiency.

Professional Packet Sent On Request

MEDICONE COMPANY
225 Varick Street, New York, N. Y.

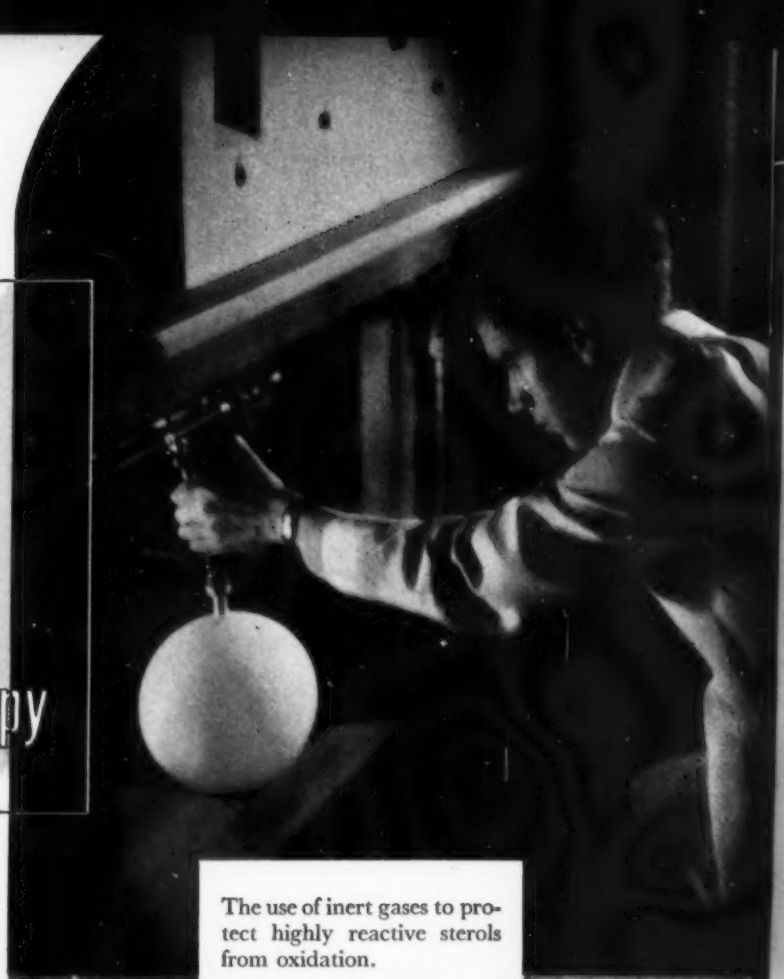
RECTAL MEDICONE

Assuring Safety and Effectiveness in ERTRON* Therapy

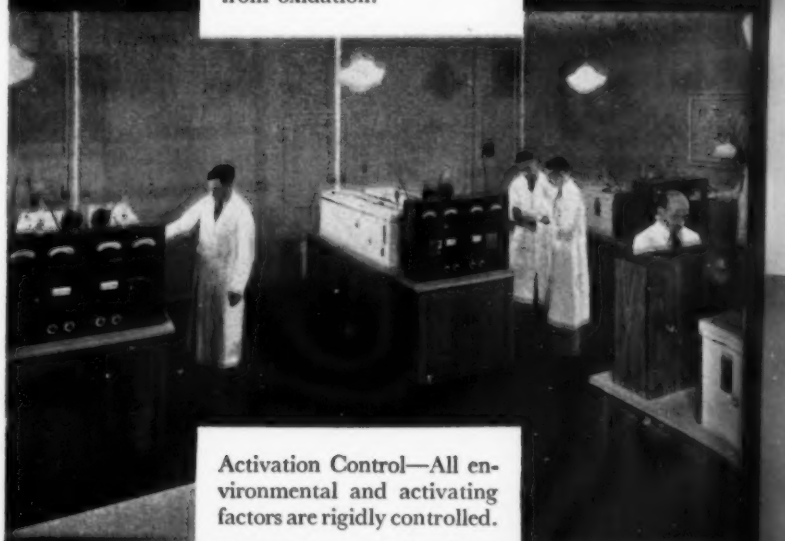
*Reg. U. S. Pat. Off.

The product which you employ to *Ertronize* your arthritic patients is made under the exclusive Whittier Process which assures high potency and absence of deleterious by-products. Careful laboratory control and assay guarantee the safety and effectiveness of ERTRON.

In addition, the safety and effectiveness have been proved in clinical investigations reported in an extensive bibliography. This bibliography refers to ERTRON by name and the results, consequently, apply only to ERTRON.

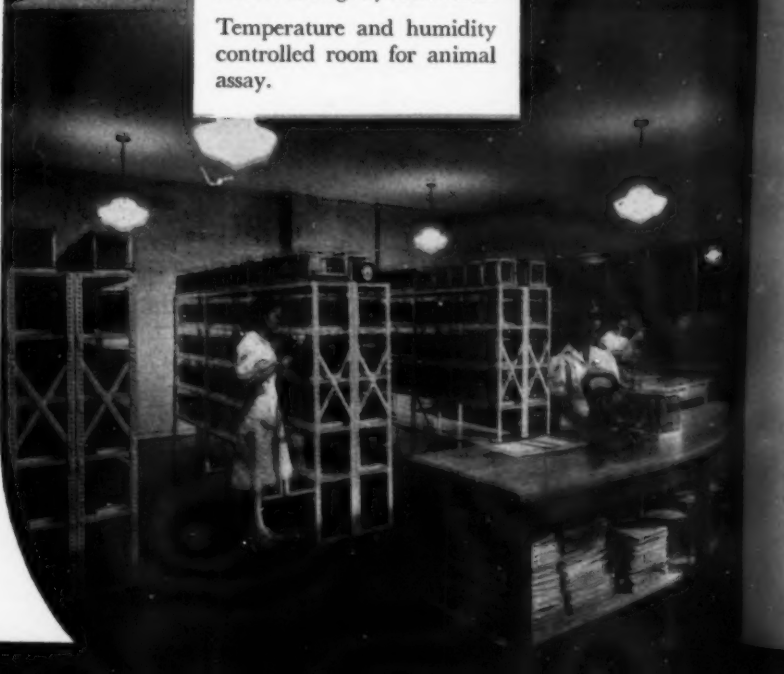


The use of inert gases to protect highly reactive sterols from oxidation.



Activation Control—All environmental and activating factors are rigidly controlled.

Temperature and humidity controlled room for animal assay.



Ertronize the Arthritic

To *Ertronize* the arthritic patient, employ ERTRON in adequate dosage over a sufficiently long period to produce beneficial results. Gradually increase the dosage to the toleration level. Maintain this dosage until maximum improvement occurs.

Ertronize early and adequately for best results.

ERTRON alone—and no other product—contains electrically activated, vaporized ergosterol (Whittier Process).

Supplied in bottles of 100 and 50 capsules.

Also new 500 capsule bottle.

ETHICALLY PROMOTED

ERTRON Parenteral

For the physician who wishes to reinforce the routine oral administration of ERTRON by parenteral injections, ERTRON *Parenteral* is now available in packages of six 1 cc. ampules. Each ampule contains 500,000 U.S.P. units of electrically activated, vaporized ergosterol (Whittier Process).

NUTRITION RESEARCH LABORATORIES
CHICAGO

is that remarkable crystallization of '20 years of experience' which he calls 'The Medical Department Manual.'

"There was much of pioneering. His first medical survey, made in 1914, of 5800 employees was pioneer. So was his inauguration of the annual survey of the same group—continuously since as much a part of routine as the running of the 'L' trains. So, in the medical propaganda of education, were the 16 radio talks he made over station WORD in the early days of broadcasting. So was his first aid school for laymen. And so was his research, which has produced among other improvements mentioned in his Manual, a non-adhering gauze dressing, an electrical burn treatment and certain safety spectacles.

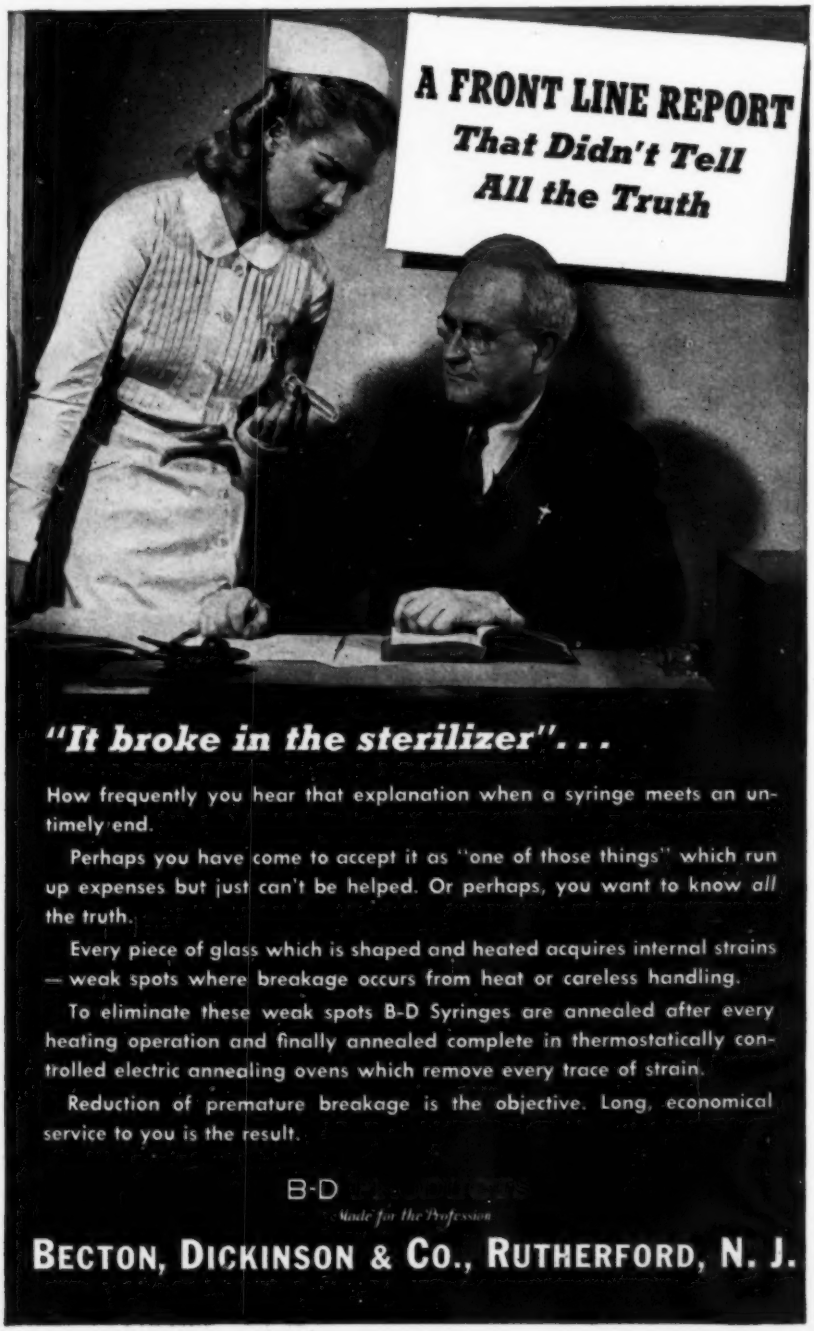
"This in itself was trail-blazing and trail-marking work of the size and kind for a creative, alert, administrative mind to revel in and thrive upon. And DR. FISHER reveled, and throve—taking these and innumerable other things in an upward stride which was paced to a steady development, not only as a pioneer in industrial medicine, but also as physician, surgeon, administrator, educator, organizer, citizen, and individual human personality."

FROM "The Medical Department Manual," by HART E. FISHER, M.D., F.A.C.S., in INDUSTRIAL MEDICINE, February, 1934: "The first two questions that arise in establishing a medical department are: where should it be located and what are the requirements? It must of necessity be centrally located and easily accessible for all employees served. It must be situated adjacent to the offices of the other departments in the same industry so that personal contact can be had with the department heads in the daily transaction of business, thus saving a lot of useless correspondence and telephoning. The requirements of each company will have to fit the special needs. The offices should have enough windows to permit of proper ventilation and daylight. If located in the city, the offices should be high up in the building so as to escape, as nearly as may be when making examinations, the distracting street noises. The high location also prevents the fly and dust hazard and assures cleaner offices. There must be an atmosphere of cleanliness and cheerfulness. A mistake so often made in industry is locating the medical department in an out-of-the-way place that cannot be used for any other purpose. The quarters should be of such proportions and so located as to carry a respectful dignity and assure privacy to the patients. Many of the employees, especially the laborer class, have had experience with medical college dispensaries and their attending lack of privacy. The average person is naturally modest when it comes to body exposure, and objects to being together with strangers in a medical department. By having a sufficient number of rooms to permit of privacy to employees, it will eliminate the dispensary atmosphere, and, with more women entering industry every day, it is essential that due study be made of the methods of taking care of these patients in the department. Toilet facilities are a paramount necessity in any medical department and should be arranged so as to permit of easy access both for male and female patients. It seems needless to state that the medical department should be comfortably heated in the winter, but in inspecting several medical departments located in old buildings, we observed that the rooms in which the patients were obliged to disrobe were decidedly chilly.

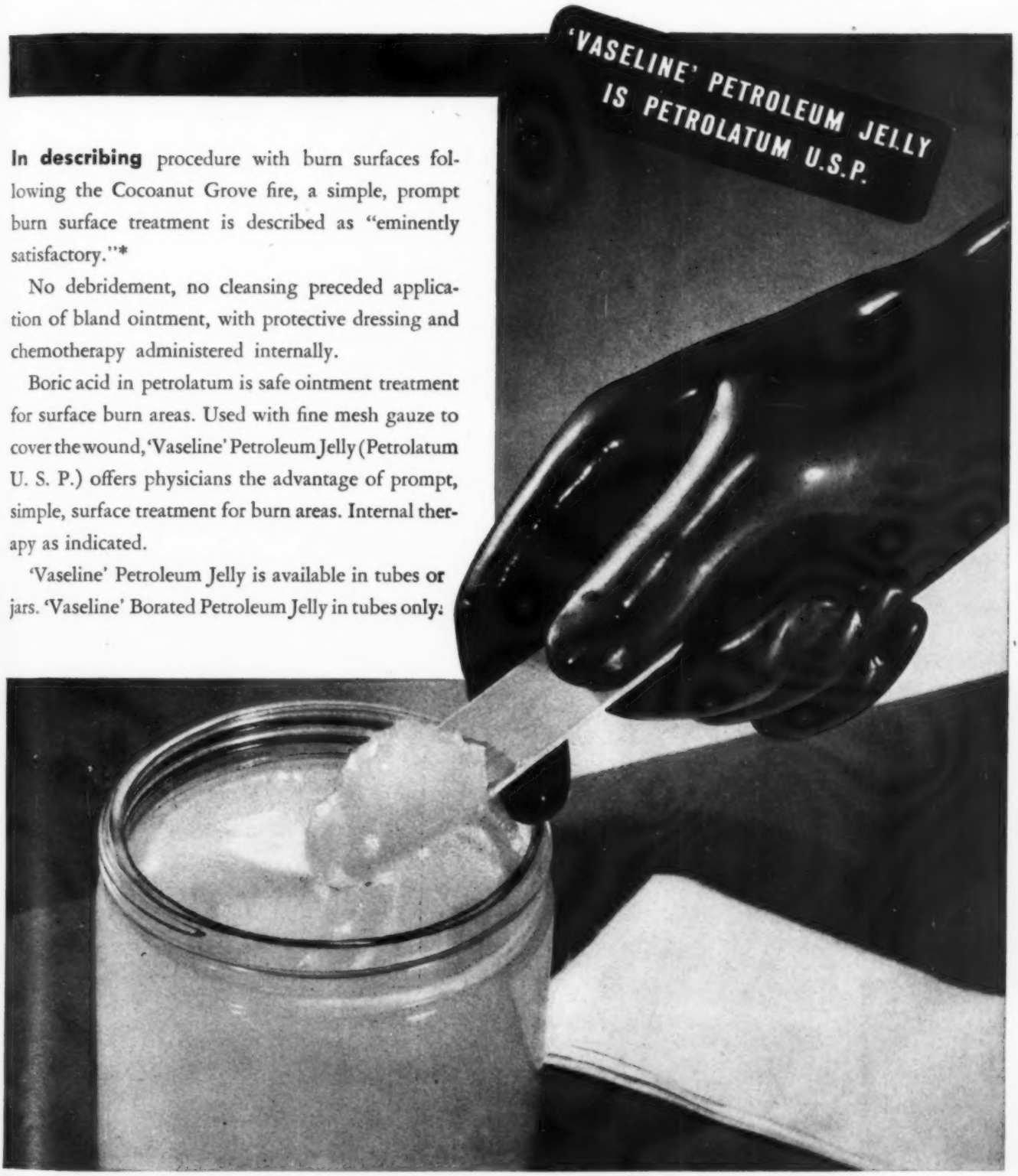
"To my mind, a description of our medical department would best set forth the requirements of an industrial medical and surgical department, and, as the activities of the various companies served by this department cover such a wide scope, it will fit most any industry.

"The present suite of offices consists of 14 small rooms, located on the 13th floor. There is a large central reception room seating 30 people, opening off the main corridor of the building, in which the reception room clerk has her desk and makes out the patients' initial receiving cards and assigns them to their doctors. The switchboard for both outside and inter-departmental telephones is at her desk. This room has cross ventilation, permitting of pure air constantly, and has window space for plenty of daylight.

"Off this main reception room, a corridor extends to the south wing of the suite of offices and another to the north wing.


A FRONT LINE REPORT
That Didn't Tell
All the Truth
"It broke in the sterilizer"...
How frequently you hear that explanation when a syringe meets an untimely end.
Perhaps you have come to accept it as "one of those things" which run up expenses but just can't be helped. Or perhaps, you want to know all the truth.
Every piece of glass which is shaped and heated acquires internal strains — weak spots where breakage occurs from heat or careless handling.
To eliminate these weak spots B-D Syringes are annealed after every heating operation and finally annealed complete in thermostatically controlled electric annealing ovens which remove every trace of strain.
Reduction of premature breakage is the objective. Long, economical service to you is the result.
B-D
Made for the Profession
BECTON, DICKINSON & CO., RUTHERFORD, N. J.

PETROLATUM for BURNS . . .
its advantage lies in its simplicity . . .



In describing procedure with burn surfaces following the Cocoanut Grove fire, a simple, prompt burn surface treatment is described as "eminently satisfactory."*

No debridement, no cleansing preceded application of bland ointment, with protective dressing and chemotherapy administered internally.

Boric acid in petrolatum is safe ointment treatment for surface burn areas. Used with fine mesh gauze to cover the wound, 'Vaseline' Petroleum Jelly (Petrolatum U. S. P.) offers physicians the advantage of prompt, simple, surface treatment for burn areas. Internal therapy as indicated.

'Vaseline' Petroleum Jelly is available in tubes or jars. 'Vaseline' Borated Petroleum Jelly in tubes only.

Vaseline
REG. U.S. PAT. OFF.
PETROLEUM JELLY

*Annals of Surgery: Vol. 117, No. 6, June 1943.

MANUFACTURED ONLY BY CHESEBROUGH MANUFACTURING COMPANY, CONS'D, NEW YORK, N.Y.

A NEW TECHNIQUE

OF LOCAL CHEMOTHERAPY

in Oro-pharyngeal Infections

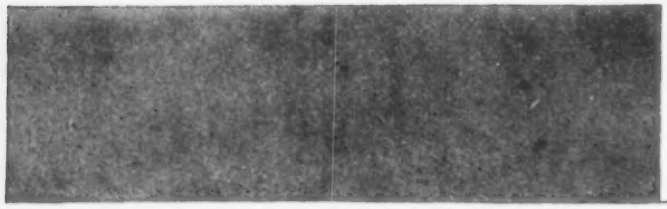
ONE White's Sulfathiazole Gum Tablet chewed for one-half to one hour promptly initiates a *high* topical salivary concentration of *locally active* (dissolved) Sulfathiazole and *maintains*, throughout the maximum chewing period, an average concentration of 70 mg. per cent. Two tablets increase salivary concentration approximately 20%.

An average adult chewing a total daily dosage of 8 tablets, for as long as an hour each, should develop a blood level of Sulfathiazole not greater than one milligram per cent. Thus White's Sulfathiazole Gum provides an effective means of sustained *local* chemotherapy—with minimal risk of the untoward reactions frequently associated with intensive *systemic* use of sulfonamides.

Indications: septic "sore throat"; acute tonsillitis, pharyngitis; infectious gingivitis and stomatitis caused by Sulfathiazole-susceptible micro-organisms; peritonsillar abscess; prevention of local infection secondary to oral and pharyngeal surgery (e. g. tonsillectomy).

In packages of 24 tablets, sanitaped in slip-sleeve prescription boxes—*on prescription only*. White Laboratories, Inc., Pharmaceutical Manufacturers, Newark 7, N. J.

White's Sulfathiazole Gum



Now Available
IN LIMITED QUANTITY

In the interests of civilian public health, we are now permitted to manufacture a limited number of the famous Pelton Model HP Autoclave for office and clinic use.

This handsome Autoclave sterilizes all operative materials at 240° to 259° F. with adjustable control which automatically provides maintenance of temperature at any desired point for gloves, instruments, or absorbent materials; materials are delivered dry and ready for use or storage. Chamber size 8" x 16"; prices (Autoclave only) Eastern Zone, $245.00. Western Zone, $250.00.

THE PELTON & CRANE COMPANY
Established 1900 • Detroit 2, Michigan

PELTON *Autoclave*

"In the north wing is the chief surgeon's office which is properly equipped for his executive as well as professional work. Next to it is the office of the private secretary, where all the files of the department are kept. A fully-equipped examining and treatment room for women is also located in the north suite, permitting that privacy which is so essential in a well-regulated medical office. There are also two rooms for physical therapy treatment, including electrical, thermal, light and hydrotherapy service, and furnished with Garland fracture beds.

"The office of the assistant to the chief surgeon is in the south wing. Across from his room is the physical examination room used for examining applicants for employment. There is a suite of two rooms, composed of the radiographic, fluoroscopic and dark rooms, which is in charge of the x-ray technician who has full control of the x-ray work. Also located in the south suite is the laboratory where all urine, sputum and blood examinations are made, as well as metabolism tests, and this is equipped with the necessary laboratory apparatus to perform all routine tests and bacterial examinations. In this laboratory is the sterilizing room equipped for sterilizing dressings and instruments, and where distilled and sterile water is provided for constant use, also tables, chair and cabinets for this work. Adjoining this room is a surgical room which is in charge of the surgical nurse, who aids the surgeons in their dressings and treatments but gives no actual surgical treatment. This room has a rubber-tile floor and is equipped with wash bowls having foot controls. At the extreme end of the south suite is located the eye, ear, nose and throat department, fully equipped for this specialty, and with a section furnished for retinoscopic and trans-illumination work.

"The physical therapy apparatus consists of Morse wave generator, radiant light and heat units, thermolite lamps, Burdick deep therapy lamps, air and water cooled quartz lamps, infra-red lamps, vibratory apparatus, diathermy and high frequency coils, hot-air baking equipment, and a combinestat for giving all electrical modifications of current in combinations. The physical examination rooms are equipped with automatic eye test cabinets, Eldridge green lamp and Williams test lamp for color perception, scales, spirometers, blood pressure unit, etc.

"The x-ray suite is equipped with a 10-inch standard x-ray transformer and rotary converter, an automatic cassette, a stereoscope, fireproof cabinets for filing films, viewing boxes, and complete developing equipment. The rooms are painted a light green color, and all light is excluded by the glass being painted black. The equipment of the surgical room consists of white enamel operating tables, instrument tables, supply cabinet, operating stool and chair, waste receptacle, steel desk and chair, solution stands, portable light, stand for dressing feet and irrigation stand. The equipment of the eye, ear, nose and throat department is complete for the treatment of all conditions arising under this specialty, and includes such apparatus as a perimeter, complete tuning fork sets, automatic eye-testing cabinets, etc.

"The walls of the department for the greater part are calcimined for the sake of cleanliness, except in the reception and surgical rooms, where they are painted, permitting of their being washed frequently. The floors of the entire suite are covered with composition flooring, and the rooms are kept as sanitary as any first class hospital. There are available in this department all the physical apparatus necessary, and those competent to operate the same, for the treatment of almost any condition, and it is only in exceptional cases that a patient is referred for treatment outside of the department.

"In addition to the medical department and its equipment is the hospital car, 40 feet long and of standard railroad construction. It consists of a waiting room seating 12 people, a treatment and examining room equipped as a model doctor's office, and a toilet room."

BARRIER

TO INDUSTRIAL SKIN INFECTION

MSA **FEND**

Forming a *protective barrier* on the skin against irritants, FEND provides specific skin safety against scores of harmful substances—is quickly and easily applied before each work period—and as quickly removed afterward with mild soap and warm water. Write for your copy of the free FEND Brochure detailing the six FEND types (with application chart).

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS • PITTSBURGH, PENNA.

District Representatives in Principal Cities

Are You Taking Advantage...

of these

2 IMPORTANT AIDS to Vitamin Therapy

A basic formula composed of a mixture of the water-soluble vitamins.

For *treatment* of clinical syndromes of beri-beri, pellagra, ariboflavinosis, and scurvy.

Each Tablet contains:

10 mg. Thiamine Hydrochloride
50 mg. Niacinamide
5 mg. Riboflavin
75 mg. Ascorbic Acid

One capsule supplies the full daily adult allowance.

(Food & Nutrition Board, National Research Council).

For *supplementation* of deficient diets or where the requirement is greater than normal.

Each Capsule contains:

5000 units Vitamin A
800 units Vitamin D
2 mg. Thiamine Hydrochloride
3 mg. Riboflavin
20 mg. Niacinamide
75 mg. Ascorbic Acid

No Trade Names to Remember
Tested Therapy
One Capsule . . . daily dose
Not Expensive

E·R·SQUIBB & SONS
Manufacturing Chemists to the Medical Profession Since 1858

These two aids to vitamin therapy embody the latest findings in the field of nutritional deficiency disease . . . provide for intensive therapy necessary for speedy response . . . save time . . . save money.

For literature address Professional Service Dept., 745 Fifth Ave., New York 22, N. Y.

This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited.

Industrial Medicine

Reg. U. S. Pat. Off.

The editors will exercise care in checking on the accuracy of data printed, but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same, in the current or any subsequent issues, as they may be inclined.

The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery."

The Science, the Law and the Economics of Industrial Health

Volume 13 | February, 1944 | Number 2

MEDICAL CONFERENCE, HERCULES POWDER COMPANY
Cincinnati, Ohio, November 3 and 4, 1943

Psychological Aspects
—In the Treatment of Industrial Injuries—

E. A. CUNNINGHAM, M.D.,
Louisiana, Missouri

As YOU may know, industrial medicine is a relatively new field to me. I am sure that many of you here today have forgotten more about the subject than perhaps I shall ever learn. However, in my brief experience, I have evolved certain definite ideas relative to the treatment of industrial injuries, and I shall present them for your approval or disapproval.

I think it is more or less agreed that industrial psychiatry is a phase of preventive medicine. Functioning properly, it should aid in forestalling or preventing serious mental and emotional disturbances in industrial employees. Psychiatry is also directly applicable to active treatment of injuries, particularly in industry. The earliest industrial application of psychiatry presumably was made by DR. C. O. BURLINGAME, of the Cheney Silk Company, in 1916; research being conducted on the high cost of maladjustment and discontent in industrial employees. It was proved rather conclusively by statistics of this experiment that much can be done to promote better working conditions, and therefore obtain increased production.

The treatment of industrial injuries may properly fall under two headings: first, PREVENTION; second, ACTIVE OR CURATIVE TREATMENT. The words *safety* and *morale* are extremely important in the field of industrial psychiatry. Many accidents can be prevented if psychological factors are controlled. Fear, worry, illness, fatigue and boredom cause many accidents and cost many lives, as do anger, irritability, bravado and perverseness. The two basic causes of accidents are the lack of physical coordination, and inattention. Physiological fatigue from undernourishment and too long hours of work, mental fatigue arising from long periods of concentrated work, nervous fatigue caused by monotony of the job, dissatisfaction and lack of adjustment to prevailing conditions all tend to increase the frequency of accidents. I strongly recommend that all employees falling into any of these groups have the condition immediately corrected, or be removed at least from that particular job. Greater effort should be made on the part of the plant manager, the safety engineer and the medical department to discover emotionally ill employees; then to determine the basis for the disturbances and have them corrected. It is evident that close cooperation between the management, the safety supervisors and the physician is extremely essential in this problem.

Injuries received in industry and those received in private practice are quite different in treatment. Psychology, even though important in both is much more so in industrial injuries. The chief differences as I see them, and consequently the reason for the application of principles of psychology, are: First, in industrial injuries the physician is furnished, and the patient often does not have the privilege of choosing his own medical care as he does in private practice. This in itself may be quite a factor in the successful conclusion of treatment. The patient may be dissatisfied with the industrial physician simply because he was not of his own choosing. He may not have confidence in the physician, and even a minor injury under these circumstances, if treated improperly and prolonged, may lead to a post-accident psychosis. The second point of difference appears in the fact that in industrial injuries compensation is provided. This is not a problem in minor and non-incapacitating injuries, because one can point out to the employee the difference between the small amount of insurance or compensation he would receive as compared to the amount of his salary should he continue to work. If the patient has the proper treatment and the proper confidence in that treatment, he will remain on the job and get well quickly. In major injuries where a patient is off work for a time he becomes accustomed to not working. The patient perhaps has a friend who at some time had a similar injury, and who collected a permanent and total disability claim of possibly five hundred or a thousand dollars at the conclusion of the litigation. The patient has much time to think. He cannot work for the first days of his injury and he unconsciously, during this time, develops a post-accident symptom complex. He then becomes sincere in his belief that he is unable to work. The only effective treatment for this condition, once it has developed, often is immediate settlement of all pending litigation. The third difference between industrial and private surgery is found in the fact that an industrial patient does not pay for his treatment, consequently he does not appreciate treatment properly. He does not, therefore, derive the same benefits as a private patient who pays for these services. The fourth difference is that industrial surgery is group surgery. An industrial surgeon must

exercise more care in the treatment of an industrial case than he does in private cases because if he makes one mistake, and has one bad result, it soon becomes common knowledge to all of the employees, and they immediately lose confidence in him.

In an attempt to offset, at least to some extent, these problems in industrial surgery, I have formulated the following suggestions. One should know every employee personally. Of course, in a large plant this is impossible, and even in small plants such acquaintanceship is not easy to attain. However, every effort should be made to know as many of the employees as possible. It has been found that pre-employment and annual examinations are excellent times to get acquainted with the employee, and to make him feel that you as a physician are interested in him. This can be done by inquiring where his home is, how long he has been working in industry, and if he looks "athletic" in type, by inquiring if he has played football, and, if so, what position he played. I may make some remark, if applicable, as to the splendid development of the muscles and of the hard knocks one must take in football and athletics. This flatters him and gives him the psychological advantage of wanting to prevent injury, and, in the event of injury, of wanting to make a rapid recovery. Then I inquire who his physician is and, if possible, praise this physician. In no case does one criticize the man's personal physician. In treating a minor injury, casual mention of the hardships suffered by the soldiers at Guadalcanal and Bataan, and their endurance and perseverance in spite of wounds, may well serve as an incentive to quick recovery.

One of the most important points in the attempt to offset the above-mentioned handicaps in the treatment of industrial injuries is to make an extremely thorough examination of the employee who has received the injury. If he feels that a thorough and complete examination has been made, including an x-ray, he will usually be convinced that he is getting proper treatment. Be perfectly frank in describing his injury to him. Attempt to tell him exactly what it is and how it will act. Be somewhat pessimistic about how long the soreness will last and stress the fact, if true, that there will be no permanent disability. Show the patient his x-ray, particularly if there is no bone injury, and call his attention to the various bone structures. Take time to emphasize to him that there is no fracture or dislocation. Many mild strains and sprains have been "cured" with x-ray pictures!

It is highly important that all of the personnel of the medical department be alert, friendly and glad to see any patient coming to the dispensary for dressing or treatment. The nurses should be instructed to pay particular attention to making the patient feel that they want to treat him and dress his wounds and that he is welcome to come to them for assistance. The medical director should let it be known to all of the employees by his actions and by his record that they will get a square deal at all times. In case of permanent and total disability he should assist them to get proper consideration just as readily as he attempts to prevent malingering or unwarranted settlements. The insurance carrier should rely upon the recommendations of the medical director and should not pay compromise claims which are unjustified, because this promotes the idea and the disease of post-accident symptom complex.

As has been earlier said, there should be complete and absolute cooperation between the plant management, the safety engineer and the medical director. The latter should report on medical problems directly to the plant manager rather than to some associate or lesser officer. This will lead to closer understanding, quicker action, and improved effectiveness of industrial medical activities.

I wish at this time to express my deep appreciation to DR. LEMUEL C. McGEE for his great assistance to me in medical matters, and to MR. RAY N. WHEELOCK, Manager of the Missouri Ordnance Works, for his whole-hearted and conscientious assistance, support and cooperation. Without this advice and cooperation our plant medical department could not have functioned.

In a recent nation-wide broadcast, MR. HOWARD COONLEY, Chairman of the Board of Walworth Company, now serving as Associate Director of the Conservation Division of the War Production Board, said:

"In this time of stress and strain when the emergency calls for every ounce of effort each one of us can exert, it is more essential than at any other time that the nervous mechanism of each one of us does not run dry. The lubrication that is needed can be compounded out of the elements of human understanding which the medical adviser and the personnel director should carry in his kit. They are the ones who should see that the petty misunderstandings, the small clashes of personalities, are adjusted before they have time to interfere with the normal operations of a group of human beings whose success depends upon their cooperation and unity of purpose. The medical adviser and the personnel director are to an industrial organization what the machine setter and the maintenance men are to the equipment of the plant. Just as a single bearing out of line may shut down an entire conveying system, so can an unadjusted misunderstanding destroy the efficiency of an entire department.

"From my point of view, the medical profession has not only a great opportunity but a deep responsibility toward the war effort. They are the ones to insist that the health of a nation should be maintained at the highest standard at all times. This requires not only medical hygiene but mental hygiene, the foundations upon which morale must always be constructed. And after all, no matter how efficiently we build our fighting equipment, how destructively we design our munitions of war, the ultimate victory must be gained through a moral, yes, a spiritual, determination that will not be gainsaid."

As industrial physicians we must meet this challenge, in order that production may go forward steadily and victory be won.

Placing the Physically Handicapped

—In Industrial Employment—

HOWARD L. REED, M.D.,
Lawrence, Kansas

AN OBVIOUS fact, staring us in the face, is that we must use more physically handicapped employees in industry. We must use men who are turned down by the Army medical examiners, and those given a medical discharge from the armed services. As the Army has had to lower its physical standards, so we have been forced to adopt a similar policy. This does not place such a hardship on us as appears on the surface. The Army usually rejects the candidates affected with hernia, asthma, chronic bronchitis, epilepsy, syphilis, deafness, rheumatic heart disease, hypertension, peptic ulcer, deformities of the spine, legs or arms, varicose veins, marked visual disturbances and adult-type pulmonary tuberculosis. Of course, this is not as cut and dried as it appears, since every medical examiner varies his requirements. This list gives us a large group of potential employees, most of whom in normal times would not be accepted for employment.

I wish to present certain experiences of myself and my colleagues with the placing of physically handicapped workers.

The location of the plant makes a difference, owing to the variations of the state compensation laws. In most states waivers on physical defects are not recognized. When we employ persons having physical disabilities, we must consider them as potential liabilities. I will consider those handicapped individuals who are still being rejected at some plants. Their handicaps are hernias, cardiac disease, varicose veins, impaired hearing, visual disturbances, epilepsy and diabetes.

Between March 1 and July 1, 1942, 2,690 employees were hired at one of the plants in a labor shortage area. Of this number 291, or 10%, were physically handicapped and would not have been hired if we had adhered to our previous physical standards. The largest group, 100, had inguinal hernias. There were 97 "cardiacs," 39 with varicose veins, 32 with impaired vision, 15 with reduced hearing and eight diabetic patients. In this group of 2,690 employees, 15% terminated their employment within six months. In the handicapped group, 13% of those with hernia, 16% of the "cardiacs," 15% of those with varicose veins, 6% of those with reduced hearing, 9% of those having impaired vision and half of the diabetic patients left employment for various reasons. This indicates that, except for some categories of the physically handicapped group, these employees are capable of performing the work assigned to them and have a favorable record of staying on the job.

The employment of workers with hernia is a controversial subject. The medical profession has long felt that inguinal hernias are largely the result of a congenital weakness in the abdominal wall. The men who collect compensation for hernia are generally those whose hernias either did not exist or were not discovered at the beginning of their employment. The man who already has a hernia can collect only in case of aggravation of his defect, and most of these individuals, in my experience, would rather hold their jobs than to push a questionable claim.

Should such a man wear a truss, and to what type of work should he be assigned? I believe that the use of a truss should be mandatory in the absence of surgical repair. Unless a man can wear an adequate support he should not be employed at any job where there is a possibility of his straining himself. We have placed these men on every type of work with few subsequent complaints. An important factor may be that the individual has been frankly and specifically informed that he is expected to do any job to which he is assigned or he will be terminated. Usually the men with hernias have had this affliction for years and know how to lift weights and to carry on their jobs in a manner that causes them no apparent difficulty.

What are the chances of strangulation? There have been no strangulated hernias in this experience. Among 40,000 workers, from March, 1941, to the present, there was not an instance of strangulation, even though all the men were doing heavy work in construction and many later worked on the powder lines. The head of the Kansas State Industrial Commission declares that in his three years' experience on the Board there have been no cases on record in that state. It appears that the risk of strangulated hernia in industry may have been overemphasized in the past.

Another group of so-designated physically handicapped workers are those living with some form of cardiovascular disease. According to physical standards that were previously set up, the following groups usually were not hired for work in industrial plants: Rheumatic heart disease with valvular lesions, hypertensive heart disease (with blood pressure above systolic 150 mm. and diastolic 90 mm.), advanced arteriosclerotic heart disease, and unexplained loud murmur or tachycardia.

According to an article by Paul White (*Ann. Int. Med.*, March, 1943) "the normal pulse rate, at rest, even in outstanding athletes has a tremendous range, actually from 35 to 118 per minute." And, in another paragraph, he states, "It has been suggested that men with high normal, or even slightly elevated, blood pressure are stronger, more alert and have more endurance on the average than those with low normal or slightly depressed blood pressure—say 150 mm. to 160 mm. systolic and 90 mm. to 95 mm. diastolic, in comparison with 100 mm. systolic and 65 mm. diastolic." During the past two years we did not set any definite figure for a blood pressure standard but rather took into consideration the entire physical make-up. We re-checked the men frequently. In my special statistical group of 97 "cardiacs," 54 have hypertension. Of the 54, 15 are between 40 and 49 years of age and 18 are 50 to 60 years of age. These employees are mostly in the maintenance department. Six of the 54 have terminated their employment but only two of them because of their hypertension. Applicants with systolic blood pressure over 190 mm. were assigned to work as janitors, tool room attendants, watchmen, or in some similar position where the work was not strenuous. Re-checks were made on these employees at the end of the first month of work and every two to three months thereafter. Only three of them were seen and treated at the hospital because of symptoms referable to their affliction.

We had 11 employees working on the production line with inactive rheumatic heart disease, three of whom resigned because they were dissatisfied with their jobs. All of these cases were re-checked the first month and every two to three months, subsequently. One man had to be transferred because the work was too difficult for the functional capacity of his heart. None of the others reported to the hospital with complaints referable to the heart.

Tachycardia was noted in six men and heart murmurs in 15 men. Some of those with heart murmurs possibly had an old rheumatic endocarditis but they were not so classified. Five of these cases were terminated, but none of the others had any complaints referable to their affliction since going to work.

Individuals with varicose veins were heretofore considered unsatisfactory for many types of work. The two chief reasons for this are their inability to tolerate long hours of standing, and the hazard of serious disability from minor trauma to the leg. How often do these factors present themselves? According to my experience with 39 such workers (16 in the maintenance department, 10 in the smokeless operations, one janitor, five in nitrocotton operations, four guards, and three on miscellaneous jobs) there were six terminations over a six-months' period, and only one of these because he was dissatisfied with his physical equipment to do the job. These individuals, at the time of their pre-employment examination, were instructed to wear elastic stockings, supporting bandages, and, in some instances, to have the varices treated surgically. The group had no significant injuries, due in part to the fact that we attempted to assign these individuals to work where a large part of their time was spent sitting down. Of course, in each worker the extent of the varicosities was the determining factor in our evaluation of his employability.

Most plants are hiring men with reduced hearing and perforated ear drums and report satisfactory results. There is one group that has not been used, i.e., the deaf

mute. It has been suggested by one of the supervisors at our plant that a group of these men might be used in the "sorting house." Thus far we have hired only one, and he is working satisfactorily in the magazine area loading and unloading powder.

Another group of employees that most plants undoubtedly are using are those with marked visual impairment. These include the one-eyed individuals. It should be made mandatory that the worker with one good eye wear prescription safety goggles when working any place in the powder lines. These workers should not be used where there is exposure to acid. Of 32 men hired with impaired vision, three resigned or were dissatisfied in a six-months' period, 19 were assigned to the maintenance department as carpenters, laborers, machinists, handy-men, and one as a welder. Nine worked in smokeless operations, three in nitrocotton operations, and one as an office clerk in stores. There were no injuries in any of these men during their experience at the plant up to September, 1943.

The diabetics are always a problem, especially when they are placed on shift work. Here is a group of men that can be used if the plant hospital will follow their medical course carefully. They need frequent urine and blood studies at the plant hospital, and usually must be advised regarding their insulin and diet. We find only rarely a diabetic worker who is adequately following management for his disease. It might be helpful to work a group of these men together, as they could recognize the symptoms of shock and impending coma in one another and notify the hospital when emergency care is needed. There is one case in particular which I recall. He is a husky, 200-pound man, 45 years of age who has a mild hypertension and diabetes. He works as a maintenance laborer. When first seen he was dissatisfied with his work, tired easily and was considering resigning. After being placed on a diet, given frequent re-checks on his blood and urine, he regained his health, remained on the job and has become a most efficient workman.

In conclusion, I believe that the statistics as given, though limited to a small number of cases, prove that the work of these handicapped men and women has been satisfactory. It is up to the medical directors of war plants to help these workers do their share toward winning the war.

Medical Management of Complaints of Women

—In the Explosives Industry—

WILLIAM H. VARNEY, M.D.,
Washington, New Jersey

COMPLAINTS among women in industry are dependent for their origin upon a number of factors. Among these may be mentioned, first, the conditions under which the women work; second, type and class of personnel employed; and third, type of operation on which they are working.

At Belvidere, New Jersey, where smokeless powder is produced, we have been particularly fortunate in securing a high class of female white labor; no colored help is employed, and all must be citizens. This automatically eliminates the very ignorant whose lack of education would only make them an added industrial hazard. Our personnel office has given preference in employment to wives of service men and to girls 18 years of age and older. Many of these workers are not interested mainly in the pay of a defense plant job but come to work because of a sense of patriotism and loyalty to their country and from an earnest desire to help in the war effort. Such workers are far less apt to complain about trivial matters and are less apt to develop psychoneuroses. They are more willing to endure unpleasant surroundings without complaint than are the types of women whose interests are purely mercenary. No women with young children are employed unless adequate provision has been made for the care of their children.

It is my opinion that many of the recently employed women have a keen sense of sex consciousness which enables them to feel that their sex is on trial in industry. They are loath to complain, to act the cry baby, or to do anything that would bring discredit to their sex. This attitude was responsible in the beginning for many women failing to report to the medical department with minor accidents until they were encouraged to do so by the management.

It may be added that in Belvidere the female employees have been selected for their intelligence and personality rather than for muscle and brawn. Since they are placed only on light operations, such as the cutting house and final presses, this method of selection has proved quite satisfactory. The intelligent worker is less apt to have accidents than is the less intelligent; likewise she is more apt to report minor accidents to the medical department when the desirability of such reporting is explained.

The pre-employment physical examination not only gives a picture of physical findings of the woman worker at the time she enters employment but also gives the medical department history of past health in regard to accidents, disease, menstruation and pregnancies. In this manner the obviously sick, unhealthy, anemic and chronically tired people are eliminated. By this screening a large number of complaints which would undoubtedly develop if such people were employed are avoided.

The type of industrial operation at which the women work is of considerable importance. It must be accepted that the proper selection of workers for their jobs is not only one of the chief functions of the medical department but is also one of the chief duties of the personnel director. Light operations requiring manual dexterity and skill are not well performed by slow, dull persons with pluriglandular deficiencies. Conversely, the alert, active and intelligent type of woman is not going to be happy doing a job of heavy lifting or working in a slow monotonous operation. In other words, round pegs do not fit in square holes. Because of this, it is of the utmost importance that close working cooperation between the personnel office and the medical department be maintained at all times.

Of equal importance with the type of operation are the conditions under which women work. Adequate light, properly placed to prevent eye strain, proper ventilation, correct seating, adjustment of the machine to the operator so as to prevent undue fatigue, and adequate rest periods are essentials to successful working conditions. The custom of having a 10-minute rest period after a four-hour span of work is to be recommended. The type of operation should be such that there is a minute or so to relax between charges in the powder press. There should always be a relief operator present to relieve a worker the minute she shows signs of fatigue. The woman who is relieved returns to her job, after an absence of five minutes, feeling refreshed and composed. Between charges, a worker should be permitted to sit down on the powder tub beside her machine and rest. These tubs are equal to a footstool. It has been found that when working on small caliber rifle powder at the cutting machine most workers show a tendency to become nervous because of frequent breakage of the strands. Breaking in a new employee on this type pow-

der is a strain on the worker, making her quite nervous at times and prone to develop neuroses. Again, in such cases, a relief operator should be called to operate the press and the worker permitted to take a short walk or to lie down until the feeling of undue excitement has subsided. This type of practice is highly successful in preventing the hysterical manifestations resulting from overwrought nerves.

Adequate nutrition is another vital factor in maintaining a healthy and efficient personnel. The undernourished worker will be less efficient when on the job and has a tendency to be absent from work. It has been found elsewhere that poor nourishment, and the resulting chronic fatigue, cause the accident frequency curve to rise. Supplementary nourishment between meals to prevent a fall in the blood sugar has been helpful in some women workers. Preferably a nutritionally balanced snack is a desirable factor in the prevention of fatigue, thereby cutting down the number of accidents and medical complaints. Given a healthy, intelligent woman working at a job she likes, under favorable working conditions, and one is not likely to have many complaints, accidents, or sickness absences. An ounce of prevention in properly selecting the woman for her job and then giving good supervision to the work is worth a pound of cure in remedying the trouble that arises when misfits are employed.

When complaints arise, a few questions should be asked. These include: (1) Is the worker basically healthy? (2) Is she contented? (3) Is she suited to her job? (4) Is the job at fault? (5) Is there faulty safety engineering? (6) Is anxiety causing a neurosis to develop? Much assistance can be given by a competent female nurse acting as a friend and adviser to the women so as to gain their confidence. In such an atmosphere they will unburden their problems to the doctor, who in turn will decide whether or not these complaints may be the symptoms of disease. A matron can also be a great help in understanding these complaints, because who knows the problems of a woman more intimately than another woman who is in daily contact with her? Often one will find women suffering from an anxiety neurosis. This will usually be in workers whose husbands or sons are in the armed forces, in those whose jobs are distasteful, or in those who dislike their foreman.

In most instances there is a sound basis for the complaints which reach us. At one time all the waitresses in the Belvidere plant complained of sore feet. It was found that they were standing on a concrete floor eight hours a day. This situation was remedied quite satisfactorily by putting down a linoleum covering on the floor. New workers are prone to develop another foot problem, viz: dermatophytosis. It seeems that this condition devélops when women workers switch from well ventilated shoes to "powder shoes," especially in hot weather. This was remedied to a large extent by punching holes through the upper parts of the shoes to allow better ventilation of the feet. It is now our practice, for summer wear, to have these holes punched in the shoes of all the women workers. Another foot complaint was pain resulting from foot strain, particularly metatarsal pain with callous formation. We have made arrangements to have a representative from a surgical supply company fit the workers with an all-leather arch support that can be changed from shoe to shoe. The cost of this support is extremely reasonable and is borne by the worker. A frequent cause of foot trouble is the improper fitting of powder shoes. This we are trying our best to overcome, but are having difficulty due to shortages in certain sizes of shoes.

To answer the question, "Is the worker healthy?", we do a physical examination and obtain a complete blood count and urinalysis. If so indicated, the worker may have a basal metabolism test, x-rays, an orthopedic consultation, or other indicated special examination. If the case is of occupational origin, we then institute the proper treatment or refer the case to the family physician if we feel it to be non-industrial in origin.

Failure to pursue such a course leads to a loss of confidence of the workers in the plant physician and in the medical department, and jeopardizes the entire medical program. It must be admitted that sometimes management would prefer us quickly to dismiss vague complaints about ether, alcohol, dinitrotoluene, and the like, and send the worker back to her press with a pep talk. I must emphasize that a successful medical program is dependent largely upon the confidence of the worker in the medical department, and this can only be preserved by making complete examination of each person in exactly the same manner as one would a private patient in his own office. When such an examination fails to substantiate the belief that ether, alcohol, dinitrotoluene, or any other physical or chemical agent has caused the symptoms of which she complains, the worker is then told with reasonable certainty of this fact and reassured that she is not harming her health by continuing to work at her regular job.

Psychoneurosis often goes hand in hand with some anxiety, fear or dislike of the job or the foreman. In the former case, the woman is referred to the family physician for treatment. In the latter case, a little detective work on the part of the plant physician may reveal that a change of job is advisable. The application of such a procedure, together with the subsequent medical care of sick workers when their sickness is occupational in origin, has resulted in a low absentee rate.

COMPLAINTS of the women workers have arisen in the following order:

1. Foot troubles—already discussed.
2. Pinched or mashed fingers caused by new workers not knowing how properly to handle the tubs of powder, or by dropping the gate of a machine on their fingers.
3. Skin disorders, dermatitis, which is usually the result of excessive sweating in hot weather, and the wearing of coveralls which have been treated with ammonium sulfamate for flame proofing. All such cases are patch tested for diagnosis and are then treated as indicated. We have found most of the trouble to be due to sweating and the lack of ventilation of the skin because of the heavy, closed type of coveralls which are of flameproofed materials.
5. Fatigue resulting from generally poor health and anemia.

Lame backs have caused little trouble here, because women are not yet doing the heavier types of work.

Our experience has not been sufficient for us to determine whether standing all day causes excessive menstruation, but many gynecologists are of the opinion that such may be the case. We have been consulted by women complaining of excessive or prolonged menstrual periods. It is natural that some such women should blame exposure to ether for their trouble. We do not do pelvic or gynecological examinations routinely in such cases, but do so when the patient herself expresses a wilingness for such an examination. Since our experience with women workers is of short duration, we are sending some of these cases to a gynecologist for a complete report on the pelvic findings in order to establish a better criterion for the diagnosis of occupational menorrhagia. It is my personal opinion that the majority, if not all, of these cases occur in women who have pre-existing pelvic infection or other type of pathology

which is responsible. Such women standing at their work for long periods may develop some increase in vascularity of the pelvic organs which, when diseased in any way, usually react by causing menorrhagia or metrorrhagia or both. Regardless of whether this be the case or not, it is helpful to have an impartial gynecologist reassure these women that an exposure to ether is not causing their trouble. It renders the worker a real service, and is found to be good industrial medicine, to recommend the correction of any existing gynecological pathology. Very rarely will a laparotomy need to be advised.

There have been some complaints on the part of the women concerning the difficulty they have in maintaining their coiffures and hair-dos. Questioning these women shows that they do not attribute this to the effect of ether, since they wear an all-inclusive flame-proofed type of turban. It has been found to be caused by excessive scalp sweating when such a close fitting turban is worn. We are experimenting at the present time with various types of turbans and headdress in an effort to find something which will be more satisfactory and more acceptable to the workers.

Pregnancy has occurred thus far only once among our women employees. We shall follow the recommendations outlined by the Children's Bureau and the Women's Bureau of the U. S. Department of Labor, for standards for maternity care and the employment of mothers in industry. These recommendations have been widely publicized and need not be repeated here. However, I believe that in plants where the concentration of ether in the air is heavy, pregnant women should not be employed after the second or third month for the reason that there is no data available at the present time concerning the effect of ether on pregnancy, and we do not wish to subject the women to any undue or unknown hazard. It is also my feeling that many women who are nauseated and suffer from morning sickness have their troubles aggravated by conditioned reflexes when working in an atmosphere of ether vapor.

The greatest difficulty in these cases is to detect the presence of pregnancy fairly early in its course. Workers should be encouraged to report the condition as soon as possible. One must also obtain help from the "grapevine" if such cases are to be located very quickly.

In general, it may be said that our experience with women workers at Belvidere has been exceedingly satisfactory, with only a minimum number of complaints arising. This may be attributed chiefly to conditions which have been discussed in this paper. The management of these complaints in the manner indicated has proved to be satisfactory.

The Periodic Examination of Workers

—In Toxic Chemicals—

LLOYD B. CLINTON, B.S., M.D., F.A.C.S.,
Carthage, Missouri

IN NOTING the personnel of this group, I am reminded of the "squib," which appeared in a recent number of a popular magazine, describing the embarrassment of a young officer when beginning the instruction of a class of many senior "Brass Hats." He said: "I realize there must be at least ten thousand men who know more about this subject than I. However, since none of them is present, I shall proceed."

I propose to develop three or four main points in the discussion of this most interesting and valuable topic. First, the value of the periodic examination to the company; second, the value to the man examined; and third, the value to the physician, with notes on the value of the periodic examination in its specific relation to our experiences in the Joplin plant over many years.

During the past few years of the stress and strain of war and its associated changes in industry, the real value of the work done by the medical profession has become a common subject of discussion in the press, on the radio, and in daily conversation. Not only do the military and public health services recognize this change, but also the manufacturers and the laity in general have gradually come to the realization that to run an efficient plant of any type, an industrial medical service is of utmost importance. Even private patients are familiar with the insurance slogan, "Be examined on your birthday." The writer well remembers that before the first World War if a physician vaccinated a few employees in the presence of an actual epidemic of smallpox, it was felt that his duties as a "company physician" were fulfilled for the mythical seven years! How that situation has changed is exemplified by this gathering here today of industrial physicians and laymen who are giving all or part of their energies to the consideration of the health of their men and women employees.

One cannot speak of the periodic examination without some consideration of the first or pre-placement examination. It is perhaps there that the greatest harm or the greatest good can be done our organization, for at that hour the examiner has a chance to avoid the taking on of the potential health risk, the chronic perpetrator of accidents, or the dreaded litigant. The essential physical requirements must not be ignored even in the present war emergency. The mentality and education of the propect must be well understood with special reference to his adaptability to the work which he is to be given. The consciousness of the much-exaggerated hazards of work in toxic chemicals is often drilled into the new or prospective employee by his wife or friends until his psychic reactions are sufficient to change the entire clinical picture. This is proved time and again by subsequent examinations, after he has become acclimated and adjusted to his new work, in comparison to his original examination. A careful search into the history of his service in previous employment, with special attention to loss of time, injuries, compensation claims and litigation in compensation court, is of primary importance. The writer feels that an inquiry into possible allergic manifestations by such questions as, "Do you have attacks of poison ivy?—Do you or your children, parents or close relatives suffer from hay-fever, hives or asthma?" is a helpful safeguard against employing one who will in all probability be unduly susceptible to the various chemicals with which he may come in contact. At the time of the pre-placement examination, the doctor has the opportunity as well as the responsibility of developing in the mind of the applicant a confidence and pride in his new organization. The doctor must also realize that subsequent to exposure to toxic chemicals, the employee's gastro-intestinal system, his cardiovascular system, his skin and his psychic complex may become altered in function, and, therefore, the accurate recording of the above findings, coupled with the electrocardiographic records, x-rays and clinical laboratory reports becomes doubly important.

IN THE periodic check-ups, physical and mental changes can be noted, records kept and compared and findings properly evaluated. This helps in improving the efficiency of the man's work and his value to himself as well as to his company. One of the primary values to the company is the detection of physical and mental changes in the employee, appearing from time to time, and which may alter the hazard quotient. The prevention of an accident in our industry is far more impor-

tant than the reporting of one, and it is not going too far to remark that such prevention is often accomplished by the careful study of the employee at the periodic examination. Who can say how many times our study of the cardiovascular system, including electrocardiographs, laboratory tests and x-rays, through causing a change in a man's occupation, even temporarily, has prevented accidents or a serious breakdown in health which would otherwise lead to invalidism and retirement?

Losses in manpower because of industrial injuries are higher now than they have been for many years. As Max D. Kossoris, Chief of the Industrial Hazards Division of the Bureau of Labor Statistics, says, considering the trends during the past two years, further drafting of men from our industries, together with the expected growth in industrial employment, will lead to continuing increase in injuries. He states that in the past two years employment has increased by 19% while work injuries rose 23%. The best method, from the physician's viewpoint, of holding down this figure, is to see that the men selected are the best available, are properly placed, and, through frequent physical checkups, are kept in as good condition as possible. Unfortunately, maybe, the doctor is not a police officer and cannot compel the correction of defects. I well remember one instance in which for seven consecutive years I urged the removal of a mouthful of abscessed teeth with no attempt on the part of the employee to benefit from the advice. I realize the fact that it is impossible to force an employee to carry out advice, but I feel that often the employee's immediate associates and family can use a bit of urging to bring out the desired results.

The writer has for many years observed a feeling among employees that the so-called company physician was the "company's physician." There is perhaps no better way of overcoming this detrimental attitude than the proper use of the periodic examination. At these times the examiner has an opportunity to convey to the employee the thought that he has more than a routine job to do, that he is anxious to gain the man's confidence and to draw from him the symptoms of the slightest effects of the work which he is doing. This requires time, adequate privacy and thought. The hazards in the manufacture of chemicals and heavy explosives are many. In addition to the usual physical injuries incident to manual labor, we must look for, recognize, and assist in preventing the actual absorption of toxic chemicals. In this industry, the dangers are perhaps not so much due to the explosive properties of the various substances handled as to the toxicity of some substances to which the man is exposed. One of the great hazards in the manufacture of explosives is exposure to excessive concentrations of nitrogen fumes. The toxicology of nitrogen oxides is well known, as is also the exposure to solvent vapors which may be present in connection with the handling of nitrocellulose and its mixture with nitroglycerine. Most investigators feel the major effects of many chemicals are caused chiefly by skin absorption rather than by inhalation. This is especially true with trinitrotoluene. In considering these cases, we must realize that susceptibility varies with individuals and appears to be not unlike certain types of allergy. The ill effects of trinitrotoluene and other nitro bodies on the worker are often classified as: (1) dermatoses, (2) early reflex vomiting, (3) affections of the blood or blood forming organs, (4) toxic gastritis, and (5) toxic jaundice. We pay special attention to the early detection of anemias, liver or gall-bladder dysfunction, kidney involvement and the vague indigestions complained of at the time of the periodic examination.

Any worker complaining of or showing clinical signs of the above should not be allowed exposure to the nitrates. Nitrogycerine is perhaps less important clinically than the above, although the symptoms are similar. "Monday morning headaches" are frequent, and in larger degree may be accompanied by nervous excitement, insomnia, diarrhea and vomiting. Working in nitroglycerin leads to some acclimatization, although that varies with different persons. We frequently see slowing of the heart rate, syncope, lowering of the blood pressure and at times, cyanosis. NORMAN JOLLIFFE, M.D. (*J.A.M.A.*,, May 29, 1943) in a discussion on trinitrotoluene, lead and nitrates, states that working in these chemicals leads to increased destruction of and poor absorption of vitamins. This is where our checkups and the accurate permanent records are valuable.

Many years ago, we noted that the "powder line" workers who were the most careless in their personal hygiene (such as bathing, change of clothing, etc.) most frequently presented the above clinical findings. At about that time, primarily to facilitate the manufacture of powder, a system of ventilation was installed in our plant, and simultaneously the condition of the men improved. With the discovery that many workers bought a pair of overalls and wore them to rags with never a proper washing, we began to furnish clean changes of clothing, and installed and required the use of hot shower baths. Further improvement was soon demonstrable in the findings at the regular examinations. We also noted that a sweaty, moist skin seemed to aid absorption. Then, with the installation of air conditioning and temperature control of the buildings on the powder lines, further change for the better was noted. Thus, through many years of periodic examinations and study of the reactions in the workers before and after modernizing working conditions (i.e., ventilation, clean clothes, baths, air conditioning), it is clear that valuable health benefits have been given them.

THERE are certainly some benefits to the examiner—the medical adviser himself—as he performs the periodic examinations. This is particularly true if he is interested in his work, if he is ambitious to increase his own knowledge, and if he honestly wants to help the men by giving more time to the study of them than is frequently done. In order to gain the clearest knowledge of the employee's condition, the physician must know something of the man's work, and an occasional trip through the plant helps here. By frequent contacts he is able to develop a personal knowledge of the industrial operation, and the employee's general health, his habits at home and at the plant, his idiosyncrasies, his susceptibilities, and his mental balance. With accurate records and the frequent study and comparison of these, the examiner gains a wealth of knowledge of disease which helps immeasurably in maintaining high physical standards, low absenteeism rates, favorable incidence of sickness and injury, and high morale among the personnel. All of which is a matter of pride and satisfaction to a conscientious physician in industry.

The type of men usually found in positions of responsibility in the manufacture of toxic chemicals, where their very lives and those of others depend on accuracy and due caution, is generally far above the average. The writer has always felt that such men resent a hasty, perfunctory "filling out the blank." Certainly such an examination is of no value to the man, the company or the physician. On one occasion recently it was found that an office assistant, not even a graduate nurse, had taken the history, blood pressure and certain measurements without the supervision of the physician. This should be discouraged. Each man is an individual study,

and each type of work is a different clinical problem. Unless the proper professional relationship is maintained, the man examined will not be benefited or impressed with the importance of the periodic examination. When the examiner is prying into the symptoms, for example, the possible effects of certain toxic chemicals, it is an art properly to impress the worker with the dangers of error and needless exposure and at the same time not to create in him an undesirable sense of fear or apprehension. Needless fear may produce an exaggerated symptom complex which often amounts to a disabling neurosis. If the physician can gain the confidence and respect of the employee, he has gone a long way in reaching the true value of the examination, toward the prevention of illness and injury.

The Periodic Examination of Workers

—In Non-Toxic Chemicals—

GEORGE McL. WALDIE, M.D.,
Ishpeming, Michigan

THIS discussion will concern itself with the periodic examination of industrial employees whose working environment does not expose them to toxic chemicals. It is assumed that the periodic examination has been anteceded by a thorough pre-employment examination and, also, that conditions peculiar to particular establishments will indicate modifications of these expressed views.

Obviously when the pre-employment medical contact is limited to a cursory screening, the subsequent examinations must be carried on with greater thoroughness if a physical appraisal of value to the employee or to the employer is the objective. It is not my concern to criticise or to defend the rapid and superficial examination prior to employment which seems to have been found necessary in certain industrial units. We are fortunate that such limitations have not been necessary, and trust that we may continue without essential modification of our present method of examination before employment.

This includes for every applicant a detailed social, family, personal, and work history; a thorough physical examination; a stereoscopic x-ray of the chest; an audiogram; and a laboratory routine which includes hemoglobin, white count, sedimentation rate, Kahn, and urinalysis. Electrocardiograph, basal metabolism determination and blood chemistry frequently supplement these observations, and, if the examination so suggests, further x-ray study is carried on to record skeletal defects. During the past year we have frequently included the Minnesota Multiphasic Personality Inventory and have found it helpful.

Observations of significance are condensed and transcribed to a record sheet designated as a Progress Summary, and on this form are added all subsequent data concerning that employee's medical experences. Basically, the employee's periodic examination starts when the first entry is made following his pre-employment resumé, and may consist merely of a re-check of a finding which has suggested later study.

No employee in our organization may return to work after an absence of more than six calendar days without first securing approval from the Department of Industrial Hygiene. The distribution of the work units over a scattered territory makes it unreasonable to require the personal appearance of the worker after a more brief absence. However, the opportunity is thus presented to carry out indicated examination procedures on those who have had any serious condition and, in addition, permits us to pass on the return to work of every compensation case. Frequently these contacts permit our completing a general examination as well as making observations suggested by the cause of absence.

With the foregoing data available, a routine periodic examination is carried on in a manner only slightly different from the pre-employment examination. A single chest film is made, unless previous x-rays or the interval history indicate the advisability of more than routine study of the chest. The x-ray is also utilized to provide a record of any intercurrent skeletal injury unless this information has previously been made a part of the record when the employee was seen prior to return to work after an absence.

Special laboratory procedures are used more freely than at pre-employment examinations because the unsuitability of an applicant can frequently be established without delving too deeply into the specific reason for rejection. However, after he has become one of our employees, we make a reasonable effort to provide him and his attending physician with all information which may be of service.

The chief difference between the manner of conducting the first and the subsequent examination is in the physical examination. Usually this is not as inclusive, although the interval history often suggests the need of additional observations which will consume more time. This is the case with employees who have sustained a significant injury, or, by their work record, have evidenced probable failing health, or who have proved to be mentally inadequate for their jobs.

The interval between the periodic examinations of workers in non-toxic chemicals should be individualized according to the findings at each examination. An assumed total for all examinations during a period may be established with theoretical exactness, thus permitting an estimate of the extreme interval between re-examinations. However, the influencing factors are so definitely peculiar to the individual set-up that this discussion can merely recite its own program, letting each medical director comment on its impracticability for his location.

AFTER an examination, first or subsequent, has been made a tentative time is set for the next routine examination. Some physical defects may suggest another contact in three months, six months, or a year. In such case a re-scheduling card is placed in the file for attention next January, April, or October, as the case may be. When an employee does not present any special problem, his re-scheduling card is placed in the file behind the cards of such employees previously examined. In this manner the employee who was examined at the most distant time will have his card at the front of the file. Individuals in this general group, as contrasted with those in the special group whose re-examination date is specifically fixed, will be sent in for examination as the schedule permits. At the present time the general group includes about 75% of our employees, and we are able to get them in for re-examination in less than 22 months. Thus every one of our employees is being re-examined in less than two years and 25% of them in less than one year. If the load should become so increased that the interval would have to be extended to more than two years, it is my belief that the present program will have to be modified or readjusted.

The tentative date for re-examination is determined, as stated previously, by the examination findings, recalling, once again, that these are workers not exposed to toxic chemicals. The extension of this interval because of the relative youth of the worker is a suggestion which has been made because of the extraordinary demands which have been thrust on the examiners by the present emergency. Such blanket extension for indus-

trial workers under 40 years is an ill-considered expedient.

The importance of tuberculosis as an invaliding disease of the young adult should be too well recognized to require discussion. However, its seriousness is often overlooked. Appreciating the importance of recognizing tuberculosis in the worker exposed to silica, a routine x-ray program has been in operation for the past 10 years in the iron industry of the Marquette Range of Michigan. A review of all employees on the payrolls of the several companies for which I am examining indicates that approximately 4% have some indication by x-ray of pulmonary changes presumably due to tuberculosis. While most of these men were employees at the beginning of this study, the total has been increased by the development of new infections, as well as by later reclassification to positive of some originally considered as showing no evidence of this infection. It should be appreciated that the nature of the industrial hazard of silicosis imposes more exacting standards for the approval of applicants than would be the case in other industries. Yet one out of 25 actually employed is considered to have tuberculous lung pathology.

In a recent letter commenting on the above incidence among our employees, L. U. Gardner, of the Saranac Laboratory writes: "I have always carried in mind 5% as a reasonably good average for the country as a whole." Certainly any let-down by industry in finding and suitably handling the employee with tuberculosis should be permitted most reluctantly, and, just as certainly, any curtailment in examination programs for workers under 40 would be a let-down in tuberculosis case finding. Let other means of getting the work done be sought without the sacrifice of a fundamental objective of any health program.

THUS far this discussion has concerned itself largely with who should be examined and the procedures of the examination. However, of themselves, the observations made on examination constitute only a small part of this meeting between physician and employee. After all, is this examination made for the purpose of collecting data, imposing occupational restrictions, or protecting the employer from potential hazards? Or is it possibly all these, and in addition a sincere attempt to do something beneficial for the employee? Certainly, each of us engaged in this type of work must be enthused by our opportunities to carry on in an important capacity a preventive medical campaign of such magnitude.

The periodic examination is almost always the most complete medical observation which the employee has had since his last industrial examination. If he has been ill during the interval, it is quite probable that examination procedures have been directed toward some particular complaint and have not been general in their scope. He may have broken a leg, but probably will have failed to learn of the inguinal hernia which has developed; he may have had his appendix removed, but found out nothing of the cataract which has been developing; or several attacks of "flu" may have slipped by without the x-ray needed to establish the diagnosis of tuberculosis.

The periodic examination presents a splendid opportunity for a frank discussion of the general physical condition of the employee, but only if the examiner is alert to its timeliness. If it is the first periodic examination, he should bear in mind the concerned mental attitude of the applicant at the previous contact when medical approval for employment was his goal. Now is the time to relieve the employee of uneasiness, and strive to place the conference on a more friendly man-to-man basis.

It is the duty of the examiner to disclose the results of his scrutiny, and it is the right of the employee to receive this information. Medical observations secured at an industrial examination take on a different status from those which might be made at the usual type of physician-patient consultation. At the latter, the physician may elect to withhold conclusions should he consider it for the better interests of the patient. However, the industrial examiner can ill-defend himself for failing to advise the employee of a significant observation the knowledge of which might permit the worker to protect himself from the consequences. The decision as to when to conceal findings is a difficult one, for unjustified alarm can result in some conditions from too frank or untactful statements. Yet, primarily, it is the duty of the examiner to see that indicated use is made of knowledge secured at this type of examination.

What should be the attitude of the examiner following essentially negative examinations? I am convinced that superlatives should be avoided in the jargon of the examining room. Flattery and dissimulation have no place in the discussion following an industrial examination. One can usually rely on the employee adding his own exaggerations and embellishments! Such phrases as "within normal limits" or "satisfactory" are far more in keeping with the aims of this fact-finding undertaking than that type of physician's comment oft quoted by patients: "I have never seen a more perfect specimen"; "Your blood pressure is exactly right"; "You are exactly two pounds over weight," and so on, *ad nauseam*.

Frankness and an honest expression of conclusions will promote a more permanent confidence, and, after all, individuals—be they physicians or employees—are only passing units in what we are building as a permanent part of industry's activities of the future.

However, it would appear equally obvious that the employee who presents himself with some deficiency corrected or improved is deserving of commendation. I have found the Progress Summary previously referred to of great help in briefly familiarizing myself with the intimate highlights of the record of the employee who is to be re-examined—the illnesses, injuries, and absences. This permits the contact to develop on a more friendly basis, with comments concerning these incidents. The chap with the rotten teeth which have been replaced with shiny dentures, the chronic alcoholic who has lost no time from work for several preceding paydays, the porcine modeled individual who proudly steps on the scales to prove his success in weight reduction —these, and other employees who have "cooperated"—a hackneyed word which fails to suggest the physical or financial sacrifice which often has taken place—are entitled to our congratulations. Perhaps some system of merit ribbons should be established so the awards can be displayed on the employees' work clothes!

BUT what about a system of demerits? All employees are not willing to follow advice, regardless of the need of doing so. Present labor shortages have made this a puzzling and worry-provoking part of the physician's responsibility. When an examination has shown the employee to be in a physical condition making him an industrial hazard to himself or to his fellow workmen, he must be removed from his job regardless of the consequences. The careless diabetic who has permitted self-indulgence to elevate his blood sugar so as to make coma a probability, the syphilitic who has neglected regular treatment, the arrested consumptive who is no longer impressed with his responsibilities toward his fellow workmen or his employer, the chronic nephritic whose way of life has become free enough to satisfy his

grossest desires—all these, and their companions in disfavor for similar reasons, must be dealt with. It is fortunate that their removal from the opportunity to inflict damage to their fellow workmen will often force them to become more considerate to themselves.

When correctible defects of importance have been found at an examination, we routinely request return after a suitable interval so that progress toward improvement can be observed. If the employee fails to appear, he is sent a letter urging him to report at his early convenience. Should this be ignored, further efforts are made to have him appear voluntarily, but when patience has finally become exhausted, he is taken off the job until he has made his peace with the Department of Industrial Hygiene. I can state with great happiness that such episodes are infrequent enough to cause little concern to those involved.

SUMMARY: (1) Periodic examinations of workers in non-toxic chemicals are an important feature of any industrial medical program. The frequency and the procedures of these examinations are not subject to standardization, but the more thorough the examination and the less protracted the interval between examinations, the greater the benefit to employee and employer.

2. The fruit of the periodic examination is the use made of its findings. Employees should be advised of the results of the examination, and should be urged to secure medical assistance in the correction or the improvement of physical defects.

3. Employees cannot be permitted by their neglect of their physical deficiencies to jeopardize the safety of their fellow workmen or become hazardous to themselves or to their employers.

Better Nutrition in Plant Personnel

—To What Extent Can the Industrial Medical Department Contribute—

C. W. HOFFMAN, M.D.,
South Amboy, New Jersey

THE SUBJECT assigned to me represents a broad and interesting field. Although I am sure we concede the great importance of nutrition, I am equally certain that all too often we become immersed in the care of the injured to the neglect of this basic branch of preventive medicine. DR. MCGEE has suggested that I raise several pertinent questions rather than attempt to cover the industrial nutrition field in bare outline.

Before proceeding, I would like to set forth several general statements. The average American working man and working woman does not eat adequately from the point of view of optimum nutrition. This rather alarming statement is thoroughly substantiated by numerous surveys conducted by many different and unrelated organizations. DR. W. A. SAWYER in the May, 1943, issue of INDUSTRIAL MEDICINE (12:278-280) cites the following example. The eating habits of 1741 employees were studied. A breakdown of the meals according to nutritional standards revealed that only 67.8% of the men ate an adequate breakfast. This is bad enough, but the same report also showed that only 50% of the women ate an adequate breakfast. At luncheon, 73.7% men and 63.2% women ate adequately. At dinner, 90.5% of the men and 91% of the women ate adequately.

Obviously, there is great room for improvement, especially in the eating habits of our women employees who are exceptionally important in industry today. The advantage of having well-nourished workers in the war plants is so plain that it need not be emphasized. Just as the efficiency of a machine varies in direct proportion to the type of fuel used, so does human efficiency vary according to the nutritional quality of the food consumed. Food is fuel for the human body. Food which is tasteful, appetizing, nutritious and properly served, produces a feeling of satisfaction, self-confidence and mental calm. These desiderata in turn aid the even temperament needed by us during these days of pressure, long hours and multiple duties.

What questions then should we, the medical officers in the industrial army, consider in this fundamental field?

I firmly believe that the first, most important and basic question is a personal one. It should be addressed to ourselves. You and I should ask ourselves this question, "How much interest do I show in the nutrition program in my plant?" The success or failure of that program will depend upon the answer given. If we have a proportionate degree of interest in our cafeterias, meals, lunch boxes, vending machines, community eating habits and community nutritional education, the battle is all but won. If we fail to give this subject a real, persevering interest, we are neglecting a basic aspect of preventive medicine.

The question of vitamins next arises. Owing to the powerful glare of publicity spotlighted upon them by advertisers it is easy to overrate their importance. Should synthetic polyvitamin mixtures be distributed to the workers?

We know that there is a difference of opinion on this matter. We know, too, that the value of vitamin concentrates is well established in the treatment of definite dietary deficiency diseases such as beriberi, pellagra, scurvy, and rickets. No one disputes the usefulness of vitamin preparations in these diseases. However, from the viewpoint of maintaining good nutrition, it seems more sound to strive for a well-balanced daily diet in employees rather than to depend upon the addition of synthetic foods. The emphasis should be placed on an adequate daily consumption of natural foodstuffs rather than a substitution program. The "Nutrition in Industry Committee" of the National Research Council does not recommend the practice of distributing synthetic vitamins indiscriminately to employees by employers.

Another important question concerns the cafeteria. Who should manage it? What connection should the industrial medical department have with it? Our own experience at Parlin may be helpful as an example. In our plant the cafeteria is run by the plant management on a non-profit basis. A hot meal consisting of two vegetables, a meat or fish serving and two slices of enriched or whole wheat bread is offered at the low price of 24 cents per plate. Beverages and desserts are offered at equally low prices. The cafeteria has set up numerous milk vending machines in the working areas. The employees can obtain, at any time, a pint of cold milk for 10 cents. These machines are exceedingly popular, and 1200 pints a day are dispensed through them alone besides the ordinary cafeteria sale of milk, which runs from 300 to 400 pints a day. Our cafeteria also controls mobile units which visit the working areas during each shift supplying sandwiches, coffee, hot soup, soft drinks and desserts. Unfortunately, the latter two articles are more popular than we like to see them. However, this is an educational problem which we will consider later. The medical department inspects the cafeteria about once a month. The sanitary disposal of wastes is especially checked, as are the proper storage of food and general cleanliness. Cafeteria employees are examined twice a year; blood serological tests are taken. The menus are inspected and nutritious foods are suggested. We recently suggested the use of only enriched and whole wheat breads. In general, our relation with the

cafeteria has been on a friendly supervisory plane. Our suggestions have always been well received.

The practice of having a concessionaire run the cafeteria is, I believe, less satisfactory than the method I have just described. Certainly the cost of food increases, and patronage is apt to fall.

One more remark concerning the cafeteria—should a nutritionist be employed? A good nutritionist, by definition, is an extremely well-trained person who, it seems to me, can be of inestimable help in large cafeterias. Such a person is well versed in food values, can keep down costs and keep up nutritional standards, and can also counsel overweight and underweight employees. A nutritionist might also promote a campaign of wise food selection by posters and lectures to groups of employees.

Should the pre-employment examination and the re-examination forms include questions concerning the diet? Eating habits vary much in different localities, in different individuals. It appears difficult to frame a satisfactory set of questions. Someone has suggested that we ask, "What is your average breakfast, dinner and supper?" Some reference to diet on the examination forms might tend to keep us more aware of nutrition. Advice might then be given in cases of obvious errors in diet. The frequent neglect of breakfast might be corrected, and the overindulgence in carbonated beverages and desserts might be lessened, through this emphasis.

Naturally, the use of colorful, simple posters distributed properly in the plant is a help in the education of the personnel. Pamphlets can be given to the employees, and notes on nutrition can be included in bulletins and plant papers. There are also movies on the subject which can be obtained.

As a closing remark, let me say that the average industrial medical department can contribute greatly to better nutrition in plant personnel if we physicians evince a healthy interest in the subject!

The Care of Non-Occupational Injuries and Illnesses

ALEXANDER McCAUSLAND, M.D.,
Medical Director,
Hercules Powder Company,
Radford Ordnance Works,
Radford, Virginia

ALTHOUGH the primary aim of industrial medicine is to keep as many employees on the job as many working days as possible, the prolonged and extensive treatment of personal illnesses among employees is neither the aim nor responsibility of the plant medical department. This attitude is as it should be, and, in times of peace, workable. But war has come. War plant communities are overcrowded; the number of doctors has been reduced; the work week is longer; and employees are unable to find their family physician when the work day is over. As a result of these factors the employees turn to the plant medical department for treatment of their personal illnesses. If treatment is not made available at the plant hospital, the employee must lose time from work in an effort to see his own doctor at scheduled office hours. The end result of that situation is interruption in production for the nation and loss in earnings for the employee. This presents a real problem, a problem which must be solved.

If industrial medicine is to help in meeting this need in selected areas a change of attitude is necessary. This involves more than a willingness by the industrial physician to accept additional work. The change of attitude must be threefold and involves management, the employees and the physicians. It must be recognized that the need is one of an emergency, one arising out of unusual circumstances, and any change of attitude should be for a like duration. We must not lose sight of the primary aim of industrial medicine. The private practice of medicine must not be encroached upon in this program.

Management should recognize its responsibility. It should make its industrial physicians available to treat its employees on a private physician-patient relationship. It should make available, for rental to the plant physicians, the material facilities of the plant medical unit where required for use in this practice.

When x-ray and other special laboratory tests are made at the plant hospital in connection with personal illness, the employee-patient should be charged directly by the company for this service. This income can be applied against the cost of operating the plant medical unit. The charge made by the company to the employee for these tests should be the same amount as charged by private hospitals in the community for similar tests.

The plant physicians should recognize and discharge their responsibility in emergency private practice by making their services available to the employees at a time outside of their regularly scheduled duties at the plant hospital. They should keep constantly in mind that their primary obligation is to their industrial medical duties. They must recognize that participation in this private practice in no way involves their company. Only an individual can be licensed to practice medicine. Furthermore, the physicians should keep fee schedules in line with those charged in the community.

The employee must recognize that this service is made available for the purpose of meeting his needs and in no way relieves him of his share of responsibility in personal illness arising outside of his occupation. He, too, must recognize that his relationship with the physician is a personal one and, to that extent, does not involve his employer or his job.

Certain problems arise in carrying out this program. One concerns the difficulty in determining when an instance of personal illness seen in an emergency is no longer the responsibility of the physician from the plant medical department. The answer cannot be determined by an established policy or "rule of thumb." Each case must be individualized. It is solely the physician who can determine this. This decision must be made in full fairness to the employee, the industrial physician, the management and the physicians in the community concerned.

Just as surely as extensive prolonged treatment of personal illnesses or injuries is not a function of industrial medicine, certain simple and emergency treatments of personal illnesses, when necessary to keep employees on the job, are definitely a part of industrial medical service. The employee who develops a minor complaint (such as a headache) while at work is entitled to temporary treatment at the plant dispensary. A single simple treatment is often curative, and the worker returns to his job unhandicapped by pain and without the loss of time. The reward is in uninterrupted production. This is in keeping with the primary aim of industrial medicine. However, when an employee repeats his visits to the plant dispensary for the same complaint, it is obvious that the symptom is not a temporary one but one for which a cause must be found in order that the treatment may be rational. It then becomes the employee's responsibility to have the cause found and corrected under the guidance of his personal physician.

In the case of the employee who suffers a sudden onset of a serious illness (heart attack, ruptured peptic ulcer,

etc.) while at work, it is also the duty of the plant medical department to render emergency treatment. When the ill employee is transferred to the care of his physician or to a hospital, the responsibility of the plant medical department ends.

Still another type of case is exemplified in the employee who reports to work not seriously ill, but too ill to work the shift. This employee is far from home. He has no transportation home until the end of the shift. Although he requires more than strictly temporary treatment and is not an emergency, he cannot just be told that he is sick and turned out. It is a duty of the plant medical department to admit him to the hospital, and provide treatment until he can avail himself of his transportation home at the end of the shift. In this type of case the plant hospital provides more extensive treatment than usual, but again this is necessary to meet an unusual condition, one related to the transportation curtailment. This treatment encourages the employee's will to get to work.

This program for the care of non-occupational illnesses should also be available to the employees and their families living on the plant site when actually required. These families are located at an inconvenient distance from the towns in the communities. It is difficult for them to get home medical service from the physicians in their community. The need is an acute one, brought about by the location of many war industries. The plant physicians may well consider the plant village their community of practice, and should feel responsible for providing the necessary medical service if medical service has not otherwise been provided. This practice should be on a patient-physician relationship, and should be carried on outside of the physician's regularly scheduled duty at the plant hospital. The families in the plant village must also recognize that the plant physician answers their calls as a private doctor and not as an employee of the plant.

In this brief discussion, I have endeavored to point out the problem at hand, and discuss what seems to be the fair approach to the problem. This approach recognizes the different responsibilities of the involved parties. The need is met without any one party bearing an unequal share of burden. The employee receives treatment for his personal illnesses, the physician receives a fee for rendering the treatment, and management benefits by less absenteeism and uninterrupted production.

The Physician's Responsibility

—In Illness and Injury of Uncertain (Occupational or Non-Occupational?) Origin—

THEODORE J. NEREIM, M.D.,
Madison, Wisconsin

THE FIELD of industrial medicine is a peculiar one. It differs from the private practice of medicine in that there is no direct doctor-patient relationship. A third party, the employer, is interposed between the doctor and his patient. In dealing with his patients the industrial physician must consider the best interests of his patient, just as the private practitioner must consider the best interests of his patient, but in addition he must protect the interests of the third party.

The principal function of the industrial physician is to keep the workman on the job, to reduce lost time from injury or illness to an absolute minimum. The cases of illness or injury definitely linked to the job are, of course, a responsibility of the plant medical staff, but there are many cases that are of questionable origin brought to the attention of the industrial physician. To set up a rigid policy governing the management of these cases is difficult. The handling of each case must be individualized. Since the industrial physician is required to determine definitely whether or not an illness or injury is occupational, there being no recognized middle ground, he must at times be somewhat arbitrary in his decisions. Cases lacking proof of their occupational origin could be decided against the patient—the employee—with a damaging effect upon employee morale. As a general rule, in all cases where there is room for doubt as to whether an illness or injury is occupational or not that illness or injury might well be classed as occupational. This policy may impose upon the employer a burden of expense and legal responsibility greater than he should reasonably be required to bear, but, on the other hand, it will make for smoother employee relations, eliminate much dispute and contention and forestall criticism of the plant management and medical staff by the workmen.

Many workers present themselves to the plant physician after a new industrial injury occurs at or near the site of an old non-industrial injury. The clinical course of the new injury is modified and influenced by the pre-existing injury. To decide how much of the resulting disability is due to the recent industrial injury and how much is due to the old non-industrial injury requires at times no less than the wisdom of a Solomon.

Recently a patient with an ulcer above the left ankle reported to our hospital. The lesion was 1 cm. in diameter and shallow. The base was necrotic, the tissues surrounding the lesion were blue and indurated, and varices were numerous and prominent. Two weeks before admission he had incurred a slight contusion and abrasion of the area that did not heal. The patient admitted that he had had a fracture of the lower one-third of the left tibia several years ago, and that he had had swelling of the foot and ankle, bluish discoloration about the ankle and occasional pain and discomfort in the part. Here, surely is a borderline case. The patient had suffered an industrial injury. However, if the injured part had been anatomically and physiologically normal, the wound would have healed in three days or so, but, owing to the pre-existing injury, the new injury will require a much longer time to heal. At all events, this case must be regarded and treated as an industrial injury.

About a year ago a patient was brought into the hospital with a traumatic injury to the left elbow. He complained of considerable pain in the joint; there was a certain amount of redness and swelling, but there was no limitation of motion. X-ray films revealed no recent bone injury but did reveal an old ununited fracture of the olecranon process. Subsequent history showed that the fracture was 20 years old and, in the interim, the patient had done hard, heavy labor on the farm before coming to work as a construction worker. The man subsequently fell into the hands of a surgeon who excised the non-united bone fragment with a resulting 40% loss of function in the left elbow joint. The case was reviewed by the industrial compensation commission, which decided that the resulting disabilities were due to the recent injury and that the old injury was not a factor. The justice of this decision is certainly open to question, but the case illustrates pretty well the current philosophy in the administration of compensation laws. Whenever there is a question of doubt as to the source of a disability, it is usually considered to be occupational in origin.

Back complaints must be included in any discussion of illness or injury of occupational versus non-occupational origin. In these days of manpower shortage, many men who are hired for hard, arduous labor, have previously followed such physically undemanding occu-

pations as traveling salesmen, bartenders, filling station attendants, clerks, agents, etc. When such physically inadequate persons are required to change drastically their way of life and means of livelihood, they are bound to develop muscle strains and back complaints while doing work which would produce no difficulty at all in men accustomed to the work. In all fairness, their disabilities must be classed as occupational and dealt with accordingly.

Not infrequently a relatively minor industrial accident may initiate an acute recurrence of a quiescent chronic disease. Recently a woman worker in the plant laboratories tripped and fell in a sitting position. She was brought to the hospital, put to bed and examined. There was no external evidence of injury and no impairment of movement of the hips or lumbar spine. The x-ray of the hips was negative. The x-ray of the lumbar spine showed no fracture, but revealed fairly well advanced arthritic spurring. The next day she developed pain in the right hip radiating down along the course of the right sciatic nerve. She was injured two months ago and is still losing time because of the "sciatica." Final disposition of this case has not been made. Whether the "sciatica" is due to the recent, but not severe, traumatic injury or is secondary to her chronic sinusitis and infected teeth will have to be decided later. However, my own view is that it will have to be considered occupational because there was definite history of injury just preceding the onset of the incapacitating illness.

As I have stated, the present critical manpower shortage has forced industrial organizations to recruit all the workers obtainable; they have been forced by conditions beyond their control to be less critical in their selections than is either wise or safe. The "letting down of the bars" has admitted a class of workers that can become a source of considerable trouble; they are the easily influenced persons who are such ready victims of suggestion that they might be classified more uncharitably and perhaps inaccurately as hypochondriacs and psychoneurotics. They often present themselves to the medical department with complaints that are not due to organic disease or injury, but are the result of fear, apprehension and the power of suggestion.

A case in point is a worker in the green powder area at our plant. One night the ventilation system failed and permitted a considerable concentration of ether in one of the buildings. The worker in question, together with many of the other employees working in the building, became nauseated and vomited. The building was opened up and aired out and the work proceeded without incident for the remainder of the shift. For two weeks following the episode the man was nauseated every morning when he got up and invariably vomited his breakfast. I wish to say in passing that after the first episode the ventilation system was restored to normal function and at no time subsequently was an undue rise in ether concentration noticed. None of the other workers developed late symptoms following the acute exposure.

The patient consulted his own doctor who unwisely told him that ether affects the liver, and then proceeded to describe in detail many symptoms indicative of liver dysfunction. After two weeks of worry about his nausea and vomiting he reported to the hospital and tried hard to convince the physician in attendance that he was certainly fatally ill with liver disease due to ether poisoning. Careful physical and laboratory examinations were, needless to say, negative, and the man was assured that he was not going to die or suffer the slightest permanent damage as the result of his single and subanesthetic exposure to ether vapor. He was convinced, for from that day on his nausea and vomiting disappeared and he has become once again a valuable worker.

Since it is the function of the industrial physician to keep the workman on the job, and he is forced as a matter of sound policy to treat cases of doubtful industrial origin, he cannot well escape the added duty of treating illnesses that are frankly not industrial but are of such a nature as to require close supervision or periodic medical check-up. Patients suffering from chronic cardiac and renal diseases, diabetes, pernicious anemia, endocrine dyscrasias, and allergies fall into this group. Such patients may be able to perform certain tasks and be useful workers if properly supervised and treated, and, conversely, if not properly managed medically they could be a hazard to themselves and to other workers.

The extent to which a plant medical staff can assume the burden of care of such cases must be determined by three factors: (1) the location of the plant; (2) the facilities and personnel available; and (3) the assistance of the practicing physicians in the plant area.

1. The location of the plant is an important factor. If the plant is so situated that a large percent of the workers live at a great distance from the plant and are required to spend a large portion of every day in travel, it will be difficult or perhaps impossible for them to secure medical care in their home communities. If they live in small villages, they can usually see their local doctors at odd hours, or even on Sundays and holidays. However, workers living in larger communities where physicians do not have office hours in the evenings or on Sundays and holidays are forced to turn to the plant medical staff for treatment or go without medical attention, or lose time from work in order to secure needed attention. At our plant we furnish many extra services upon specific request of the worker's personal physician. For example, it has been our policy to give hay fever injections in close cooperation with the patient's own allergist. This is a service that is greatly appreciated by both the patient and his doctor. The doctor likes the arrangement because the patient gets his "shots" at the regularly prescribed intervals, and he is kept informed of the progress and reaction of his patient to the treatment.

Patients with chronic cardiac and renal disturbances should be periodically checked up, and in our organization they are asked to place themselves under the care of a private physician if they are not already under treatment.

2. The facilities and personnel available. This point needs no enlarging. The golden rule dictates that nothing that is beyond the experience, skill and judgment of the staff should be attempted in a plant hospital.

3. An important point is the attitude of the local physicians practicing in the area. The plant physician is bound by ethical standards and common decency to cultivate always a spirit of cooperation with his professional colleagues practicing in the plant area. Most of us were general practitioners before becoming plant physicians, and we would do well to bear in mind that we should at all times treat the other fellow as we would like to be treated if our positions were reversed. All plant physicians should maintain membership in local county medical societies, and faithful attendance at meetings is almost imperative. Nothing should be done by plant physicians to justify the private practitioners' fear that the physicians in industry may become competitors or that they are in any way attempting to encroach upon private practice. We should exhibit a willingness to be helpful. The attitude of the outside doctors is a factor of great importance in governing the extent to which care of borderline cases can be assumed. Hostile medical neighbors will cause the plant physician

to lean in the direction of restricted service; friendly medical neighbors will enable the plant physician to lean in the direction of more extended service for the ultimate benefit of the worker.

We do not hesitate to use plant x-ray and laboratory facilities to aid outside doctors in studying their private patients, if such patients happen to be employed on the plant site. This service is especially appreciated by doctors in small communities where x-ray and laboratory facilities are sharply limited. All requests by outside doctors for special laboratory, x-ray, or other services to their patients who are employees of the plant are gladly granted. Very often patients report to the plant hospital for treatment of a non-occupational illness or injury after having consulted a private practitioner. In such cases the doctor first consulted is notified at once, and an amicable disposition of the case is arranged.

Occupational Disease

—The Approaches to an Adequate Study—

JAMES G. TOWNSEND, M.D.,
Medical Director, U. S. Public Health Service,
Division of Industrial Hygiene, National Institute of Health,
Bethesda, Maryland

AN APPROACH in golf is "the stroke made after the tee-shot which lands the player's ball on the putting-green."[1] The better the approach, the more likely you are to get a birdie or an eagle on the hole. One might liken the hole on the green to the adequate prevention and control of occupational disease. This is always the goal, but situations do arise where things may have gone wrong in the plant health maintenance program. Getting into "the rough," into "sand traps," and encountering the other obstacles of proper employee health maintenance may often be traced to attempts of the doctor and industrial hygiene engineer to take short cuts, spending time on a poorly organized program and consequently getting off the "fairway" of sound clinical, public health, and engineering practice.

When the medical department of a plant has a case of occupational disease on its hands, the situation represents a breakdown in the protective and health conservation activities of the plant organization. Once this occurs, the doctor's responsibility changes from one of preventive medicine to a clinical one of diagnosis and treatment. A potential occupational hazard has been revealed as an actual one, and, if the illness occurs in a jurisdiction where occupational diseases are compensated, the disease is also a compensable one. Being compensable, legal requirements must also be met, which include the establishment of cause and effect.

Definition of Occupational Disease

A DEFINITION of that body impairment which constitutes an occupational disease has always been difficult. Many of the original compensation laws when referring to accidents or injuries typically meant traumatic accidents. Gradually, more and more cases of occupational disease were compensated under these original laws, particularly after the courts had ruled that disease was interpreted as being an injury, in connection with its "arising out of or in the course of employment." This was clarified with regard to the compensation of occupationally ill Federal employees when the Attorney General on May 16, 1923, interpreted the term "personal injury" to include injuries arising from occupational disease as being justified under the law and intent of Congress.

In reviewing the occupational disease legislation of various states, one observes various definitions of occupational disease. The Rhode Island law, which provides a schedule type of coverage, states: "The term 'occupational disease' means a disease which is due to causes and conditions which are characteristic of and peculiar to a particular trade, occupation, process or employment."

Ohio, which now has a blanket or general coverage law, defines an occupational disease as "a disease peculiar to a particular industrial process, trade, or occupation, and to which an employee is not ordinarily subjected or exposed outside of or away from his employment."

Indiana also has general coverage and, as used in its act, "the term 'occupational disease' means a disease arising out of and in the course of the employment. Ordinary diseases of life to which the general public is exposed outside of the employment shall not be compensable, except where such diseases follow as an incident of an occupational disease as defined. . . ."

The New York law refers to occupational disease as being "the natural and unavoidable result of conditions of employment."

According to Hayhurst's definition (which is a physician's definition),[2] an occupational disease is an affliction which is the result of exposure to an industrial health hazard. He lists poisons, mechanical irritations, friction and tension diseases, fatigue disease, infections, disease following injuries, illumination afflictions, temperature disabilities, noise deafness, and atmospheric pressure diseases as specific occupational diseases. He also refers to diseases which are partly occupational and others that are referred to as occupational health complaints and non-conformities, such as postural defects advanced by occupation.

Even diseases not usually listed in a schedule occupational disease law may be occupational from a broad viewpoint. For instance, the incidence of pneumonia may be abnormally high in some occupational groups. This condition was observed in a statistical study by the U. S. Public Health Service of reports from industrial sick organizations a few years ago. It was found that the pneumonia case rate in a steel industry was nearly 70% above the rate in public utilities, and approximately 50% higher than the rate for a group of other reporting industries. The statistical evidence clearly indicated that the nature of the work and working environment probably played an important role in the causation of the disease. Subsequent environmental studies revealed that the disease was associated with exposure to heat hazards, wide changes in temperature, outdoor exposure to inclement weather, industrial exposure to humid, drafty conditions and wet clothing, and sudden cooling and chilling of the body. The excess number of cases was concentrated in relatively few occupations. Following the investigation, it was possible to outline remedial measures, such as mechanical devices to reduce the heat hazard, adequate provision of change houses, and the provision of shelters in stormy weather for those working out of doors.

These definitions of occupational disease, and related comments, have been given to illustrate that often we are not dealing with clean-cut entities, and this fact should serve as a warning to the plant doctor to be especially meticulous in his examinations and in the recording of his findings.

The total disability in traumatic injuries is prompt and can be related very specifically to the time and place. On the other hand, occupational diseases differ from traumatic injuries in that the former have a latent period during which the patient is free of symptoms analagous to the incubation period of infectious disease. This period is sometimes referred to as an intercalary

period. In other words, the injuries sustained in the culmination of occupational disease may be visualized as repeated minor injuries incurred over an extended period of time. In the case of some occupational diseases, such as lead poisoning and silicosis, these injuries may be incurred while the employee has been working for more than one employer, hence the difficulty of establishing the place of origin and date of onset.

In a recent article by Smith,[3] dealing with scientific proof, which was published in both medical and legal journals, he indicated that scientific proof in the evidentiary field revolves around three categories of problems, namely, (1) identification of the worker and his malady, (2) causation, and (3) effects. Much of this evidence can be supplied only by you doctors. In other words, is there a disease present or not? Did the disease arise out of and in the course of employment? It is also important to determine the nature and extent of disability, and the record should contain information to aid in establishing whether the disability is due to occupational disease or other illness.

From these prefatory remarks, it may be seen that we are dealing with the whole gamut of clinical practice when we have cases of possible or real occupational disease under our care. It is much better for all concerned to prevent their occurring at all.

The Essentials of a Good Program

YOU MUST use those scientific means and methods which enable the accurate ascertainment of ultimate facts. To do so will require accurate occupational histories on all workers, pre-placement examinations, periodic examinations, and an intimate knowledge of the working environment.

Occupational History—Since we are dealing with a potential case of occupational disease, it is necessary to obtain a detailed and complete occupational history. This history should contain information on all phases of work in which the man has been engaged, not only in the present place of employment but all the tasks he has performed during his lifetime. It should specify the various occupations or jobs at which he has worked and as much information as is possible to obtain on the type, severity, and duration of exposure to an occupational disease hazard. Needless to say, the more familiar the examining physician is with plant operations or activities, the more lucid and helpful the occupational history will be. This calls to mind the old motto of Ramazzini: "He who treats the working man must know the trade he practices." With this background, a doctor can evaluate statements made by the patient. He should know whether the location could afford sufficient exposure to TNT, nitrogen oxide gas, or other poison or condition which may be suggested as etiologic factors.

TOTAL OCCUPATIONAL DUST EXPOSURE OF ANTHRACITE COAL WORKER

Occupation	Number of years in each occupation	Dust concentration in millions of particles per cubic foot	Millions of particle-years per cubic foot
Slate picker	2	380	760
Patcher	2	71	142
Mule driver	3	71	213
Miner's laborer	3	480	1,440
Miner	15	480	7,200
Section foremen	5	7	35
Total	30		9,790

$$\frac{\text{9,790 millions of particle-years per cubic foot}}{\text{30 years}} = \text{326 millions of particles per cubic foot}$$

SOURCE: The Determination and Control of Industrial Dust, Public Health Bulletin No. 217, April 1935. V. The Application of dust determinations to practical problems, p. 66.

General Clinical History—Full information must be obtained on the current illness. It is important to record the factors relating to the employment and situations which give rise to an unusual exposure to occupational hazards. These should be carefully evaluated and the possibility of other illness giving rise to similar symptoms should be considered. It is important to watch for malingering, but the manner in which the workman repeats the symptoms will often reveal this possibility. This recording of subjective complaints deals not only with the actual case of ocupational disease, but also the potential case. All too often there is a tendency for examining doctors who perform the frequent periodic examinations of employees engaged in toxic operations to scan over the subjective complaints, or to fail to ask supplemental questions to clarify the true meaning of these complaints.

Only recently an example came to my attention of an instance where a periodic examination program went awry. In a large TNT plant, a 64-year-old man had been certified by the plant medical department as a Class C or III employee. In other words, he was permitted to continue work under medical supervision but was to be kept out of toxic operations. The foreman and others in production had different ideas concerning this man's usefulness, and he was found on a TNT line sustaining moderately severe exposure to TNT for a period of about two months before the medical department was aware of his presence in this area. Frequent inspections might have discovered him there. His periodic examination then revealed a marked granulocytopenia and a leucocyte count going as low as 500, and he died despite the application of modern therapeutic measures. It cannot be said that the medical department was entirely to blame. There was, however, a slip-up on the part of the medical department in this plant which permitted two months to elapse before the man was examined after beginning his work in the toxic area. It is a policy in this plant that all employees in toxic areas be examined monthly. One might say that the medical department was responsible for not convincing the management that men coming in the Class C category should always be given an examination by the medical department on transfer from one plant department to another. Thus, such a routine procedure as the periodic examination of workers is an important cog in the health maintenance program of a plant and provides a means of obtaining objective evidence needed in the approach to an adequate study of occupational disease cases. Don't strip the gears!

Objective Clinical Evidence—The physical examination, like the history, should also be careful and comprehensive. It is important to record the site and description of the lesions or the signs produced by lesions. In a case of dermatosis, the appearance and distribution of the lesions is highly significant and may suggest whether or not one is dealing with a contact dermatitis. Further study of the plant process, the worker, and fellow workmen would be necessary to establish definitely an occupational etiology. The clinical facts should be adequately recorded on the case record, with photographs of the lesions when indicated. Special attention should also be given to noting occupational stigmata.

Dermatitis may call for the withdrawal of the worker from a certain operation for a period of time to see if the lesions will clear up, and if the dermatitis recurs on his return to the same employment we have a therapeutic test with the conditions of work being responsible for the disease. When the dermatitis has passed the acute phase, patch tests may be performed to ascertain the substance or substances responsible.

In instances of systemic occupational disease, the

mere recording of the patient's weight and comparing it with this finding on the pre-employment examination will often be illuminating. If there has been a neuropathy, there has possibly been a loss of muscle substance and marked difference in the circumference of the affected extremity compared with the unaffected extremity. This may be ascertained with a measuring tape, and the objective finding recorded. Needless to say, all body systems have to be checked, but particular attention will have to be given those known to be affected by a suspected cause. All in all, the same technics will be used in the study of any disease. As an examining physician proceeds with the examination of a patient, he should be on the alert for signs which will call for further investigation. A slight degree of jaundice would suggest a liver function test. Precordial pain and irregular heart rhythm suggest an electrocardiographic study. Hematuria may call for a pyelogram and cystoscopic study. An unusual blood picture may call for sternal punctures and all manner of hematologic studies.

Many occupational diseases simulate the ordinary diseases of man. No stones should be left unturned in determining the true etiology. It is important to know the diagnostic significance of many of the tests which are to be used. Even in such routine tests as red blood cell counts and hemoglobin determinations, it has been necesary for plant medical directors to establish local norms.

When a physical disability occurs, there is bound to be objective evidence. The doctor is obligated to get that evidence and make it a matter of record, but it is most important to get it at the right time. In the case of poisoning by lead, for instance, biologic specimens for the determination of concentrations of lead in biologic fluids, such as urine and blood, should be obtained as near the time of disability as possible. The longer the man is away from exposure, the nearer the quantitative results of these specimens will be to so-called normal values.

It is well to consider other objective measures. In other words, would the use of a clinical photograph supply additional objective evidence? In certain instances, an x-ray is necessary. The time is here when it is almost as essential to x-ray the chest as it was formerly necessary to x-ray a potential fracture. An electrocardiogram, electroençephalogram, serodiagnostic test of blood and spinal fluid, basal metabolic rate, and results of various kidney and liver function tests are other examples of objective evidence. Leads as to which test to perform are obtained from a careful clinical examination of the patient.

Postmortem Autopsy Examinations and Necropsy Studies—Occasionally a death will occur in a worker, when there is considerable presumptive evidence that it was caused by his occupation. It is important for the medical director to know under what conditions it is possible to obtain an autopsy in his jurisdiction; in other words, will the coroner permit the operation and does the industrial commission have the power to grant permission for an autopsy? For the adequate appraisal of the facts and and equitable settlement of a claim, it is the doctor's duty to obtain a necropsy whenever possible. With the information obtained by such postmortem study in a case proved to be of occupational origin, it should be possible to outline measures to prevent a recurrence of the disease and render a fair settlement of that particular compensation claim.

There is still another reason why a postmortem examination is important. Many of you are familiar with Cabot's comparison of the clinical and postmortem diagnoses and analyses of 1000 autopsies in the Massachusetts General Hospital, where it was shown that the clinical diagnostic error in determining the cause of death, even in carefully studied hospital cases, may be very high. In that connection, I would like to refer to a case presented by Dr. Leary, Professor Emeritus of Pathology, Tufts College Medical School, and Medical Examiner of Suffolk County, Massachusetts,[4] in which occupational disease was suspected but infectious disease was demonstrated following a postmortem examination.

"An apparently robust individual was employed in a chemical plant in which several deaths had occurred from nitrite poisoning. He was ill for 10 days with an obscure respiratory disturbance which terminated fatally. The clinical diagnosis was central pneumonia with nitrite poisoning. Autopsy disclosed an acute general miliary tuberculosis. The only old foci of tuberculosis were found in the lungs in the form of closed caseous masses. . . ."

"It was shown that the man was employed in the power plant of the chemical company, at a distance of one-quarter mile from the nitrating plant and was exposed to nitrous fumes, and then in the most minor degree, only when he walked to the office of the works, once a week, for the purpose of drawing his pay. This exposure was not adequate to produce changes which would have affected a closed lesion in the lungs, the rupture of which must have produced his general infection. That the exposure was slight, if any, was indicated by the absence of evidence of bronchial irritation."

Environment—In my previous comments I have endeavored to create the viewpoint that each of you as a plant physician should regard yourself as the health officer of the plant. This calls for frequent inspection trips through the plant, that you may become familiar with plant operations. These inspections should preferably be made with the industrial hygiene engineer, or the production or safety engineer who is acting in that capacity.

When potential or incipient cases of occupational disease are making their appearance, the industrial hygiene engineer should make quantitative studies of the workplaces to ascertain the degree of air contamination, and pool this knowledge with the doctor's observations. There is no reason why the doctor should not request this study. For example, in the course of some of our studies in industry, it was found that a certain gray iron foundry had an unusual number of cases of silico-tuberculosis. The physician in attendance called in engineers from our Division for the purpose of making a careful study of the environmental conditions in the plant. This study revealed that the actual dust exposure associated with the foundry practice in this plant was rather low, and for a while it was difficult to account for the many cases of silico-tuberculosis, since the conditions at the time of study apparently existed over a good many years. In other words, no recent improvements had been made in the plant. However, when a careful time study was made of each particular activity among these foundrymen, it was found that the parting compound used in preparing the mold consisted of pure quartz. The exposure to this parting compound, although less than one hour in an eight-hour working day, was extremely dusty. When this factor was taken into consideration, it was evident that this brief but heavy exposure was the causative factor in the silicosis contracted by these men. From this study, the remedial measure was very obvious, namely, the substitution of a non-silica parting compound for the silica one.

This activity should be reversible. The engineer or safety official will frequently observe poor practices or the introduction of a new substance in the manufactur-

ing process. By notifying the medical department the examining physician may be warned of the disease-inducing possibilities of these new agents. If it is a new substance the doctor has recourse to the industrial medical literature and can determine whether or not the substance has been the cause of occupational disease in other plants, not only in this country but abroad. If there have been no reported instances of human exposure to the substance, then possibly there are reports of animal experimentation. There should be no hesitancy on the doctor's part to acquire additional information from the various research laboratories, and governmental and other agencies.

Reporting—There is still another responsibility that the doctor has in cases of occupational disease. In certain jurisdictions he is obligated to report instances to the health department or other agency. This requirement, however, is not common to many states. Moreover, these reports cannot be used for evidence in some cases. In Ohio, for instance, declarations which the reporting physician has made on the required form to the State Health Department cannot be used as evidence of the facts stated therein in any action arising out of the disease therein reported.[5]

There is a still more important reason for reports. Just as the governmental health officer needs reports on communicable diseases to know where, how, and under what circumstances cases are occurring, so the same is true of the health officer of the plant. Summaries of the activities of the medical department, month by month, to management should contain this information because it will afford the medical director means of outlining a plan of action. If management is thus informed periodically, management will or should provide the medical director with the backing necessary for initiating measures to avoid a repetition of serious occupational disease, whenever possible.

The activities of the medical department in these studies should not be hampered by management itself. The medical department can assume full professional responsibility and should report to top management. It may be that in time sound business practices will make this a uniform practice.

Closely related to the subject of the reporting of occupational diseases is the education of the private practitioners in the vicinity of an industrial plant. The patient, though occupationally ill, will often go to his private doctor first. Needless to say, the general practitioner should know something of occupational diseases if his clientele includes many plant employees. He should be encouraged to visit the plant and observe the work processes. Moreover, the clinical and industrial hygiene aspects of individual cases can be freely discussed by him and the plant medical staff. Such consultations or seminars will be illuminating not only to the general practitioner, but also to the plant physicians. I am inclined to believe that bringing discussions down to the individual case level will yield more definite results than formal papers on occupational diseases presented at local medical societies or other meetings. The latter form of education, however, should be used if there is sufficient demand for it.

By gaining more familiarity with the potential and real occupational hazards in the plant, the private physician will be less prone to interpret dermatitis or other ailments as occupational, unless an industrial connection can be substantiated.

Briefly to recapitulate key points to consider in an approach to an adequate study of occupational disease situations:

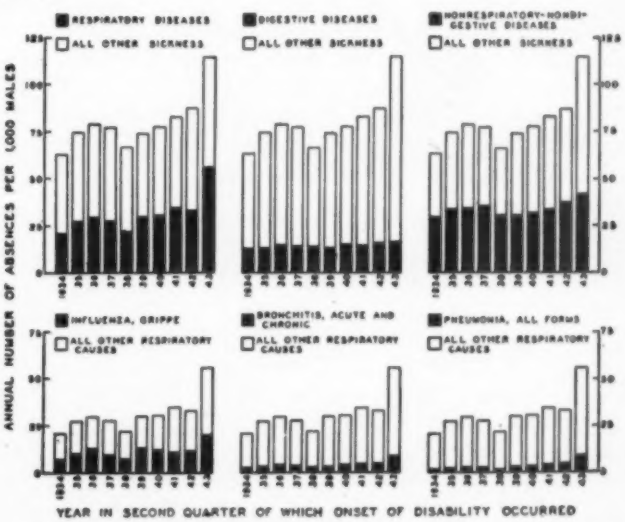
1. Have a sound workable program.
2. Be familiar with all phases of work in the plant.
3. Know the occupational disease law in your jurisdiction.
4. Perform the proper diagnostic tests.
5. Obtain data while the subject is hot.
6. Record your observations. 7. Report the case.
8. Use consultants and review the literature.
9. Cooperate with and enlist the aid of works engineers and safety men in solving knotty occupational disease problems.
10. Play ball with the local practitioner.

References

1. Funk and Wagnalls: The College Standard Dictionary. 1940.
2. HAYHURST, E. R.: Occupational Disease Considerations. *Industrial Medicine*, 12:443, July, 1943. HAYHURST, E. R.: Occupational Diseases: Definition, Course, Prevalence, and Prevention. *Monthly Lab. Rev.*, July, 1929, Bureau of Labor Statistics, U. S. Labor Dept.
3. SMITH, H. W.: Scientific Proof and Relations of Law and Medicine. *Ann. Int. Med.*, 18:450, April, 1943.
4. LEARY, TIMOTHY: The Importance of Post-Mortem Examinations in Industrial Cases. In Discussion of Industrial Accidents and Diseases, 2:180, Division of Labor Standards, U. S. Labor Department, 1935.
5. Ohio Department of Health: Industrial Survey of the State of Ohio. Columbus, Ohio, 1940, page 13.

Sickness Absenteeism

ANALYSES of periodic reports on sickness and nonindustrial injuries causing disability lasting more than one week among over 250,000 male members of industrial sick benefit associations, group insurance plans, and company relief departments, show an increase of 31% when compared with the corresponding rate for 1942, the chief contributing factor being the group of respiratory diseases with its increase of 68% from a rate of 33.5 in 1942 to a rate of 56.0 in 1943. It will be observed that each member of the respiratory group of diseases shows an increase—pneumonia, 88%; influenza and grippe, 77%; and bronchitis, 75%. The digestive diseases show a slight increase, while appendicitis reveals a decrease from 5.3 to 4.3. The nonrespiratory-nondigestive diseases present an increase of 12%, neurasthenia, 40%, and diseases of heart and arteries, and nephritis over 20%.



The chart presents graphically, in the upper half, the variation over the 10-year period, 1934-43, of the contribution of each broad cause group to the varying total sickness rate, the lower half showing the contribution made by influenza and grippe, bronchitis, and pneumonia, respectively, to the varying total respiratory disease rate.

From "Sickness Absenteeism Among Industrial Workers, Second Quarter of 1943. With a Note on the Occurrence of the Respiratory Diseases, 1934-43," by W. M. GAFAFER, Principal Statistician, U. S. Public Health Service, Division of Industrial Hygiene, National Institute of Health. Public Health Reports, 58:52, November 24, 1943.

Precision Necessitates Fitness

—The Evolution of an Industrial Medical and Surgical Service and the Development of an Industrial Vision Program—

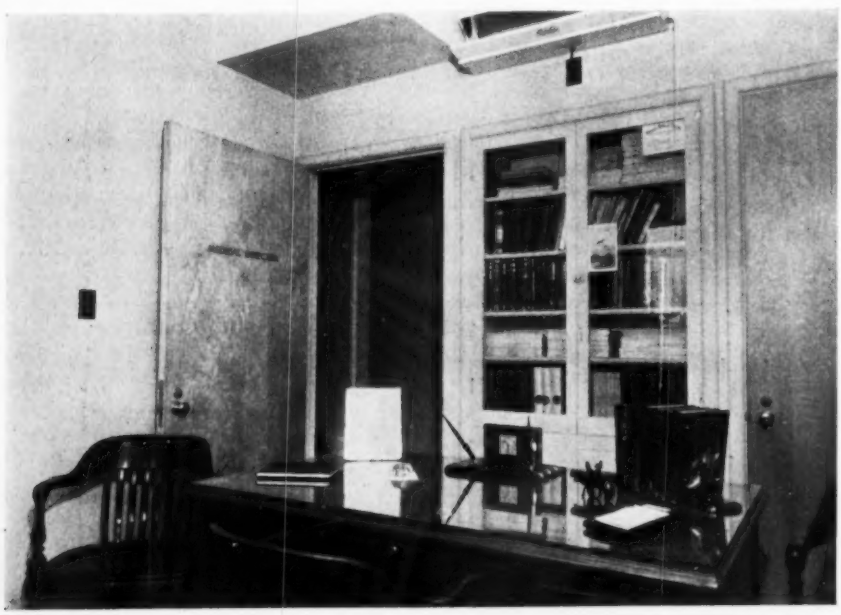
H. GLENN GARDINER, M.D.,
Medical Director, and
C. O. SAPPINGTON, M.D., Dr. P.H.,
Chicago

FOOTE BROS. Gear & Machine Corporation, of Chicago, presents an excellent modern example of the development of an extensive medical and surgical service which pays good dividends both to employer and employees.

The company manufactures a number of different kinds of machines and almost every kind of gear known in the trade. A visit to the plants discloses that gears varying from four pounds to many tons in weight are made of different kinds of metal and can be seen in many processes of manufacture. Numerous precision operations are used in the making of the machines and gears produced by the company, hence the necessity for good eyesight among employees on such jobs; this will be reviewed more in detail later.

In September, 1941, VICTORIA M. STRALKO, R.N., who was formerly an industrial nurse in other organizations, came to Foote Bros. in charge of the first aid work, the medical and surgical portion of the work being referred to outside physicians and surgeons. Because of increasing employment, which reached a peak of 6700 employees and has recently averaged around 6500, the necessity for a full-time medical director was realized. Accordingly on July 1, 1942, DR. H. GLENN GARDINER was appointed as present medical director, and MISS STRALKO has become industrial nursing supervisor. Another full-time physician has recently been added, in the person of DR. M. M. DUNN, who is associate medical director. The present staff at the central medical dispensary consists of two full-time physicians, four full-time nurses, together with the supervisor, three clerical workers, and one refractionist. A full-time physician will shortly be added for the night shift. It should be explained that there are four plants, situated close to each other, and in each of these there is a first aid service with full-time registered nurse in charge, in addition to the central medical dispensary.

After beginning work, a great deal of the time of the medical director was used during the first six months in planning the new medical center and equipping it. For this purpose a two-story house, bungalow type, owned by the company, was moved to a central location convenient to the four plants to be served. The plans shown here give the arrangements (including the employment department at one end), and the illustrations show the equipment.



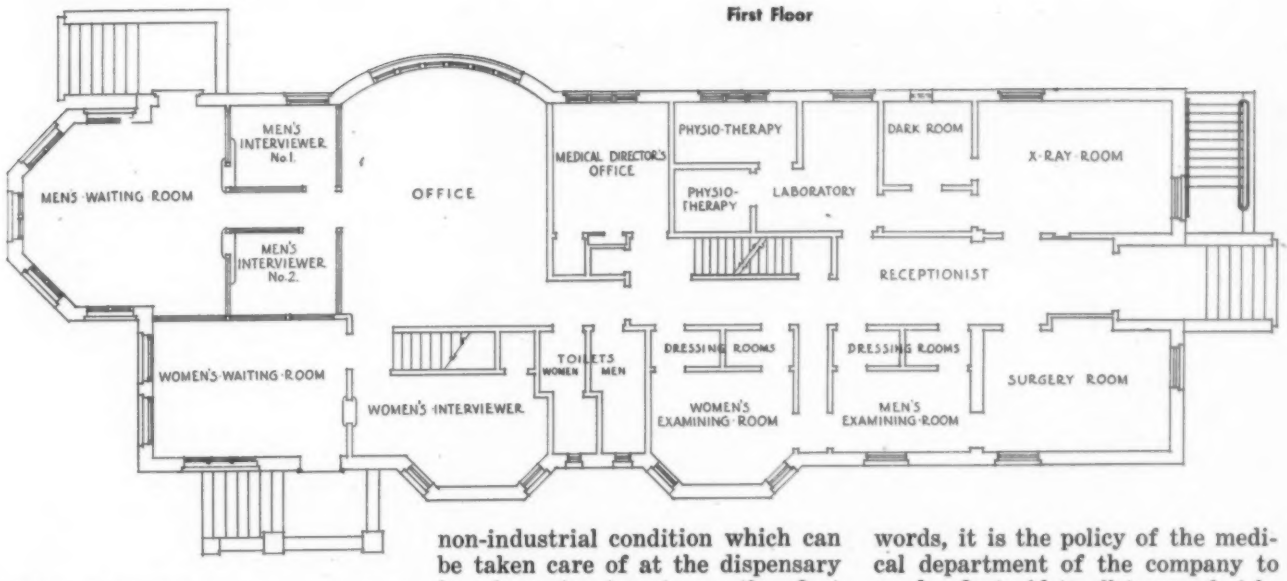
Medical Director's Office

Scope of Service Rendered

AT ENTRANCE to employment, every applicant is given a thorough physical examination, making use of a special form entitled "War-Time Pre-employment Physical Examination." The examination also includes a routine urinalysis. Routine x-rays of the chest and a Kahn blood test are done on all cafeteria employees, and would ordinarily be done on all employees except for wartime restrictions. X-rays of the chest and of other portions of the body are taken, as indicated by the history or examination findings, as are also Kahn blood tests. A fully equipped laboratory, both x-ray and clinical, provides the facilities for doing whatever procedures are considered necessary.

Physical defects found on the pre-employment examination are referred either to the family doctor,

Examination Room (one of several). (Dr. M. M. Dunn and Stella McFadden, R.N.)



if that is desired, or to a panel of specialists with whom active contact is constantly maintained. In connection with these activities the following physical classification of applicants is used:

Class A —Employable immediately in any position.

Class A-C—Acceptable for immediate employment in any position conditional on correction of designated physical impairments.

Class B —Recommended for specified position due to present condition.

Class C —Employable after correction of impairments as noted.

Vocational Defects—Employable if suitable job is available in which the noted defects will not seriously handicap the individual.

Class D —Not recommended for employment.

The dispensary service provided assumes full medical and surgical care of all occupational injuries and diseases. In addition to this, any non-industrial condition which can be taken care of at the dispensary is given treatment on the first visit; if further advice and treatment are necessary, the individual is referred to his family physician, or, as noted previously, if special services are needed, he is referred to one or several of the specialists on the specialist panel. In other words, it is the policy of the medical department of the company to render first aid to all types of sickness and injury and to refer non-industrial cases as found necessary.

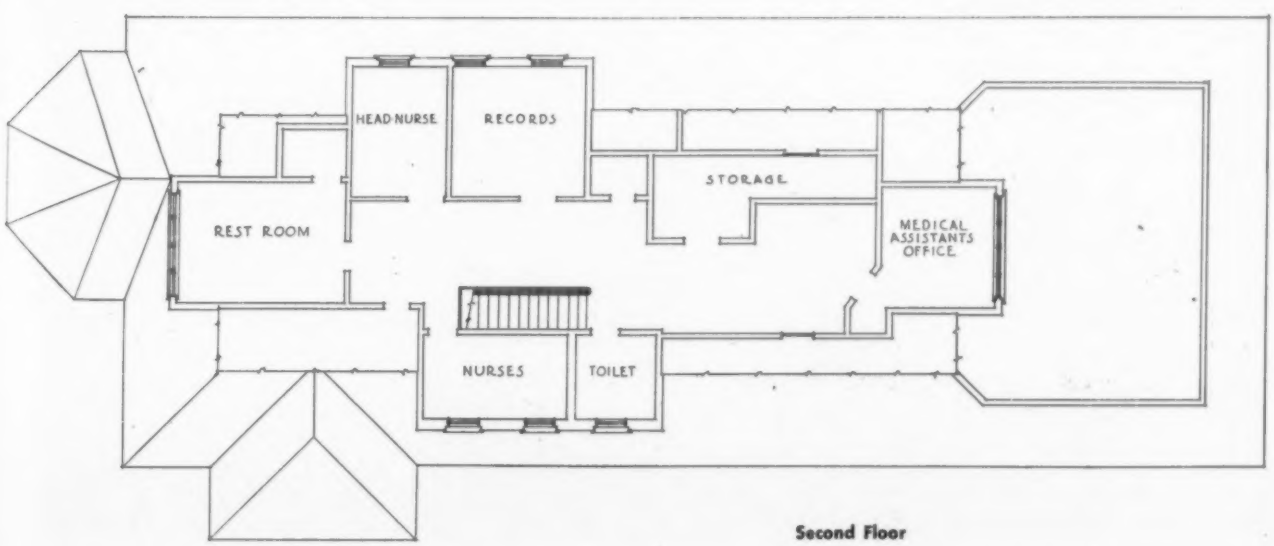
In the treatment of industrial injuries, in addition to the usual procedures, various methods of physical therapy are constantly used, including the whirlpool bath,

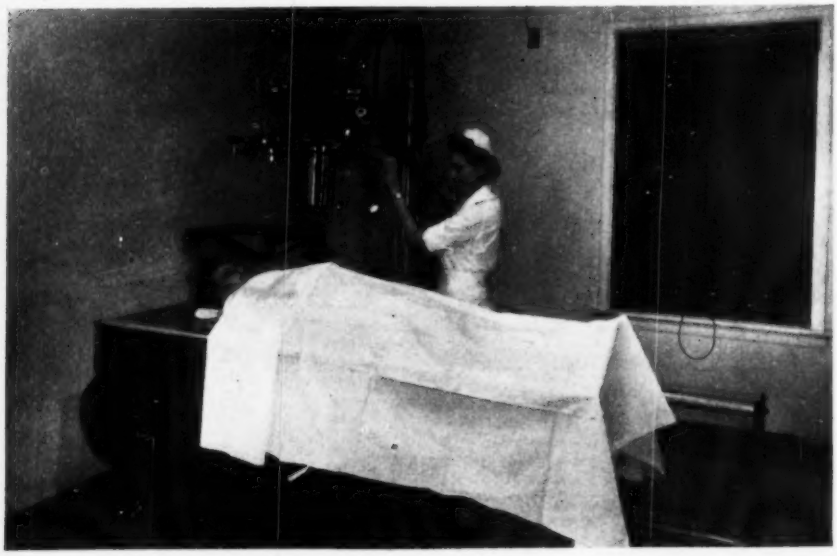
LABORATORY REPORT
FOOTE BROS. GEAR & MACHINE CORPORATION

NAME_____ CLOCK NO._____

URINE	BLOOD
Appearance:_____	Hemoglobin:_____ Gms._____ %
Reaction_____	Red Blood Count:_____
Specific Gravity:_____	White Blood Count:_____
Albumen:_____	Differential:
Sugar:_____	Polymorp. Neut.:_____ %
Microscopic:_____	Basophils:_____ %
_____	Eosinophils:_____ %
_____	Monocytes:_____ %
_____	Lymphocytes:_____ %
Other tests:_____	Abnormal cells:_____
_____	_____
_____	KAHN (Qualitative):_____

DATE:_____ SIGNED:_____





X-Ray Room—showing patient ready for x-ray picture. (May Wilson, R.N.)

short-wave diathermy, and infra-red and ultra-violet rays.

The company offers, therefore, a comprehensive diagnostic and treatment service for the use of employees who become injured or sick because of their occupations, and a limited service with adequate guidance for non-industrial types of injury or sickness.

Vitamin tablets, made up to conform to specifications detailed in the *Journal of the American Medical Association* (July 18, 1942, p. 949) are sold at cost to employees; the package is without a brand or name. Oral catarrhal vaccine is similarly sold at cost, in a container without brand or name, after purchasing the best material obtainable in the open market.

View in Surgery—patient having examination for foreign body in the eye. (Dr. H. Glenn Gardiner and Edna Helander, R.N.)

Health education activities are carried on through advice given during dispensary visits and talks on special occasions, as well as through the company's monthly magazine *High Gear*.

A group insurance plan is in effect, to which each employee contributes $1.50 a month, the balance being made up by management. In essence, this plan provides for hospitalization benefits and surgical fees, and for financial benefits for 13 weeks' disability in any one year, covering non-industrial disability from the seventh day and paying approximately $15.00 a week in cash benefits for accident or sickness disability.

The medical department cooperates actively with all other departments, particularly having daily

Clinical Laboratory. (May Wilson, R.N.)

contact with the employment, safety and industrial relations divisions.

Recent Experience

REMEMBERING that the average number of employees has been 6500 over some period of time, and that there are two shifts (called "day" and "night" shifts), the following shows the record of pre-employment examinations during a six months' period of 1943:

June	772
July	705
August	672
September	1040
October	451
November	377

The record on industrial cases shows a lower incidence of sickness and injury in night workers than in

day workers during a six months' period, in the latter part of 1943, in the different plants as follows:

TABLE 1.

PLANT		NEW CASES MONTHLY AVERAGE	TOTAL CASES MONTHLY AVERAGE
45th Street	Day	954	3783
	Night	922	4008
52nd Street	Day	880	3165
	Night	660	2726
54th Street	Day	1001	3613
	Night	751	2719

In interpreting the figures of Table 1 it is necessary to know that although there are four plants involved, three are devoted to precision work, the other being known as the industrial gear department.

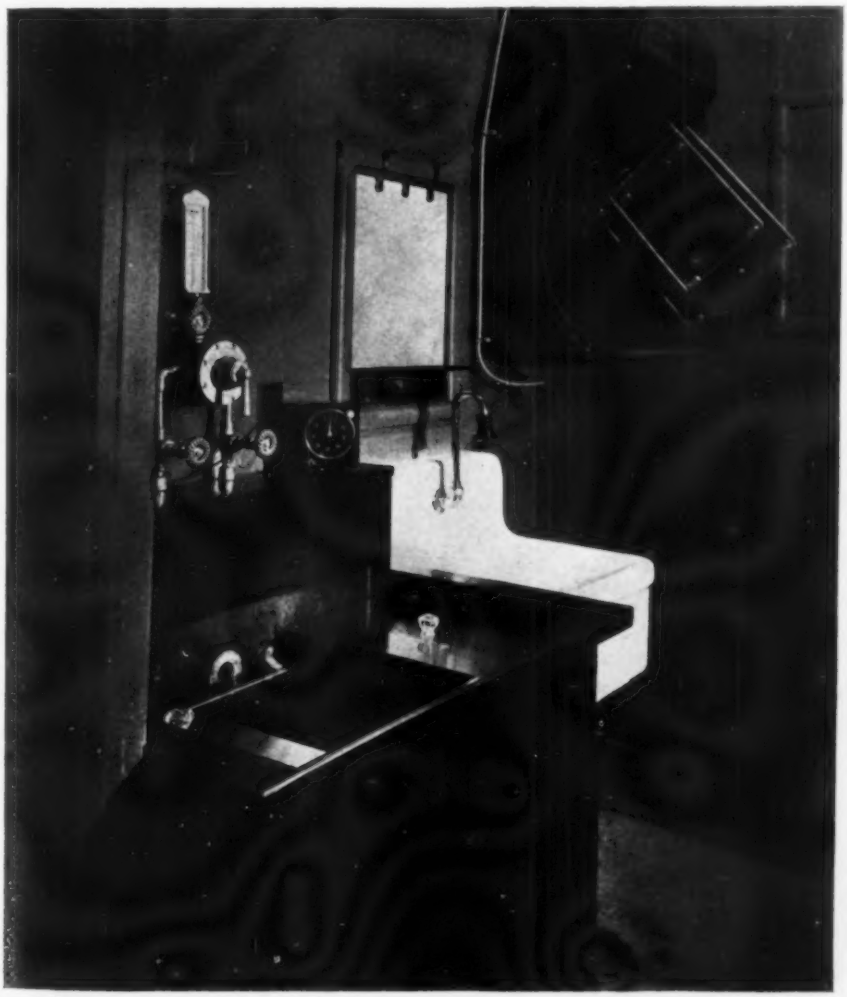
Reviewing the total entries for the year 1943, the total number of visits to the first aid dispensaries, including day and night workers, were registered as follows:

45th Street 93,697
52nd Street 59,857
53rd Street 19,432
54th Street 50,057

These figures are not truly representative of average normal conditions at the 54th Street and 52nd Street plants—in the former the first aid service was started during 1943—in the latter the first aid service was in operation during 1943, but production was not at peak until late in the year.

Physical Therapy Rooms, view from Clinical Laboratory. At left, behind refrigerator is whirlpool bath—center, short-wave diathermy apparatus. Next, on right, ultra-violet and infra-red ray apparatus. At extreme left is incubator

Detail of Dark Room showing developer trays, forced draft drying cabinet and other equipment



On the basis of the above experience, it has been estimated that there were 18.5 man-years lost in the time used only in going back and forth to the various first aid departments, by employees who needed the service. This emphasizes the principle that has been stated by several industrial medical directors: only when preventive principles are applied and become effective, does an industrial medical and surgical service begin to pay real profits.

The Visual Program

AS THE result of the pre-employment physical examination of applicants, including the special vision tests, it was discovered that approximately 80% of those applying for work needed some visual aid or correction, in order to function efficiently at the precision work in which a great many employees were to be placed. This has necessitated the inauguration of a special industrial vision program under the supervision of DR. HEDWIG S. KUHN, consulting ophthalmologist. DR. KUHN worked directly with JOSEPH TIFFIN, PH.D., Professor of Industrial Psychology at Purdue University, in the training of examining technicians who were taught to use the orthorater which represents the initial portion of the visual examination, in determining visual fitness. Also there have been worked out, through the close cor-

Record Room and Record Secretary

relation of visual capacity with job performance, the visual needs and requirements for different types of occupations. Knowing such requirements in advance, it is possible to choose persons who have the visual capacity needed for any type of job which is available. This makes job placement a scientific accomplishment, at least with respect to visual capacity and performance.

As a part of the pre-employment examination in this establishment, the applicant goes through the various visual tests which are given to him on the orthorater by the technician. The purpose of these tests is to secure figures on the following standards: (1) uncorrected acuity for distant and for near vision; (2) acuity with the glasses habitually worn, e.g., work acuity; (3) muscle balance for distant and for near vision; (4) stereopsis, and (5) color appreciation. In addition to these so-called basic findings as recommended by DR. KUHN, (which really provide a minimum amount of information), special tests are added, referring particularly to near vision (for example, determination of the near point of accommodation and of convergence) such as might be involved in selecting persons for fine or intricate work which has to be done within

Refractionist — making confirmatory and additional eye test

Routine Use of the Orthorater—as a part of the pre-employment examination. (Marie Angel, Technician)

12 inches distance from the eye.

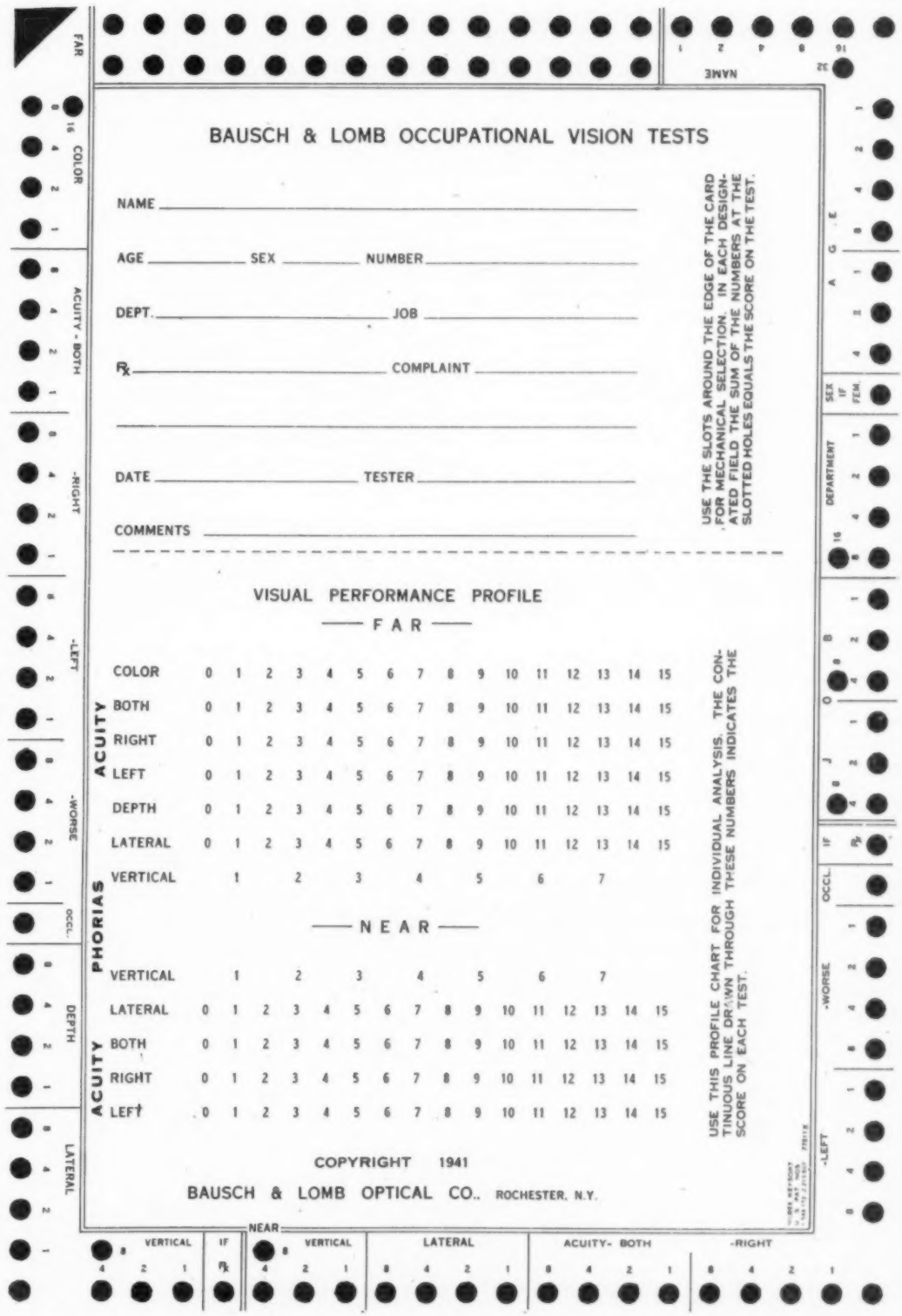
From the viewpoint of industrial relations, the objectives of the visual program in industry have been stated by DR. TIFFIN as follows:

1. To obtain visual records for compensation cases.
2. To aid in the selection and placement of new employees.
3. To reduce accidents, especially eye injuries.
4. To improve employee job satisfaction.
5. To reduce labor turnover.
6. To increase production.
7. To improve quality of product.
8. To improve the bases of transfer, promotion, and, when necessary, layoff.
9. To impress upon employees

the need for proper visual hygiene.

At Foote Bros. the visual program begins when the employee applies for work. The technician gives the orthorater tests, which are coded upon a card that can be later used as the basis for statistical data. This record card indicates the visual capacity of the individual, and also the necessity for further tests, if these are indicated. If correction is deemed advisable, the applicant is then sent to the staff refractionist who makes the necessary additional tests and also checks previous tests made, then formulating a prescription for correction. Arrangements have been made by the company whereby the applicant receives this prescription incorporated in safety glasses and purchases the glasses through the company from a reliable optical concern at cost. Further check-ups may be necessary in adjustment to work and, if so, the services of the consultant and refractionist are used as needed.

The program thus far has proved to be a great asset in providing the employability of persons on precision jobs where specific visual capacity was necessary and without which, as in times past, considerable work would be rejected in the final inspection. Perhaps more important is the fact that much visual rehabilitation has been accomplished.


BAUSCH & LOMB OCCUPATIONAL VISION TESTS
NAME
AGE SEX NUMBER
DEPT. JOB
Rx COMPLAINT
DATE TESTER
COMMENTS
USE THE SLOTS AROUND THE EDGE OF THE CARD FOR MECHANICAL SELECTION. IN EACH DESIGNATED FIELD THE SUM OF THE NUMBERS AT THE SLOTTED HOLES EQUALS THE SCORE ON THE TEST.
VISUAL PERFORMANCE PROFILE
FAR
ACUITY COLOR 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
ACUITY BOTH 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
ACUITY RIGHT 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
ACUITY LEFT 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
PHORIAS DEPTH 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
PHORIAS LATERAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
PHORIAS VERTICAL 1 2 3 4 5 6 7
NEAR
PHORIAS VERTICAL 1 2 3 4 5 6 7
PHORIAS LATERAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
ACUITY BOTH 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
ACUITY RIGHT 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
ACUITY LEFT 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
USE THIS PROFILE CHART FOR INDIVIDUAL ANALYSIS. THE CONTINUOUS LINE DRAWN THROUGH THESE NUMBERS INDICATES THE SCORE ON EACH TEST.
COPYRIGHT 1941
BAUSCH & LOMB OPTICAL CO. ROCHESTER, N.Y.
FAR
COLOR
ACUITY - BOTH
-RIGHT
-LEFT
-WORSE
OCCL.
DEPTH
LATERAL
NEAR
VERTICAL
IF
VERTICAL
LATERAL
ACUITY- BOTH
-RIGHT
NAME
AGE
SEX IF FEM.
DEPARTMENT
IF
OCCL.
-WORSE
-LEFT

Summary

THE evolution of a standard industrial medical and surgical service in a modern precision industry has been described briefly, supplemented by illustrations of layout, equipment and forms. In this establishment, because of the nature of the work and the necessity for visual fitness, the visual program has gone through a unique development within a year, and now represents one of the best in American industry. A cordial, standing invitation is hereby extended to industrial physicians and surgeons, nurses, and personnel and safety directors to visit the plant and make first-hand observations.

Although much has been accomplished, neither management nor the medical department is satisfied, because more remains to be done. This is particularly true of the use of preventive methods and their successful application to the control of accidental injuries; and also there remain certain personnel and health problems which have been in the background because of the exigencies of war production.

When the smoke of battle clears, there will be increasing opportunity to "take up the slack," and adequately cope with certain problems that now call loudly for solution.

FOOTE BROS. GEAR & MACHINE CORPORATION
WAR-TIME PRE-EMPLOYMENT PHYSICAL EXAMINATION

APPLICANT:_____ AGE:_____ SEX:_____
ADDRESS:_____ MARITAL STATE:_____
COLOR:_____ NUMBER OF CHILDREN:_____ AGES:_____
SERIOUS ILLNESSES:_____
SERIOUS INJURIES:_____
OPERATIONS:_____
MENSTRUAL ABNORMALITIES:_____
KNOWN DEFECTS OR WEAKNESSES:_____
OCCUPATION:_____ LENGTH OF TIME:_____
JOB APPLIED FOR:_____

HEIGHT:_____ inches; WEIGHT:_____ lbs.; TEMP.:_____°; PULSE:_____; BLOOD PRESS.:____/____
HEARING: R_____ L_____ REFLEXES:_____
TEETH:_____ TONSILS:_____
ABDOMEN:_____
HERNIA, VARICOCELE, OR HYDROCELE:_____
CHEST:_____ BREASTS:_____
HEART:_____
LUNGS:_____
POSTURE:_____
SPINE:_____
EXTREMITIES:_____
VARICOSITIES:_____
SKIN:_____
DEFECTS OR DEFORMITIES:_____
URINALYSIS:_____
OTHER TESTS:_____
REMARKS:_____

DATE:_____ SIGNED:_____
MEDICAL DEPARTMENT

Sixth Annual Congress on Industrial Health

THE Sixth Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held Tuesday and Wednesday, February 15 and 16, at the Palmer House in Chicago. This meeting follows directly after that of the Congress on Medical Education and Licensure. Physicians and others interested in industrial health are cordially invited. There is no registration fee. The preliminary program is as follows:

Tuesday Morning, February 15

REPORT of the Council on Industrial Health"—STANLEY J. SEEGER, M.D., Chairman, Texarkana, Texas.

"Industrial Health—A Restatement of Objectives"—JAMES E. PAULLIN, M.D., Atlanta, Georgia, President, American Medical Association.

"Preventive Medicine—Its Importance in Medical Education and Practice"—JAMES STEVENS SIMMONS, BRIGADIER GENERAL, M.C., Washington, D. C., Chief, Preventive Medicine Division of Office of Surgeon General, U. S. Army.

Panel—"Postwar Industrial Health"—Moderator—R. L. SENSENICH, M.D., South Bend, Indiana. Participants: HARVEY BARTLE, M.D., Philadelphia, Council on Industrial Health, President, AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS; SIDNEY R. GARFIELD, M.D., Oakland, California, Permanente Foundation Hospital; W. P. JACOB, Long Island City, National Association of Manufacturers; NEVILLE PILLING, Chicago, Zurich Insurance Companies; J. G. TOWNSEND, M.D., Bethesda, Maryland, U. S. Public Health Service; ROBERT J. WATT, Washington, D. C., International Representative, A.F.L.

Tuesday Afternoon

NEW Developments in Occupational Medicine —Aviation"—DAVID N. W. GRANT, MAJOR GENERAL, Washington, D. C., The Air Surgeon, U. S. Army.

"An Institute of Industrial Health—Plans of a Proposed Development in the Medical Science Center of Wayne University"—EDGAR H. NORRIS, M.D., Detroit, Dean, Wayne University College of Medicine.

"A Visual Service for Small Manufacturing Plants"—HARRY S. GRADLE, M.D., Chicago.

"Medicine, Labor and Industry Join Hands in Philadelphia" — CHARLES-FRANCIS LONG, M.D., Philadelphia, Chairman, Commission on Industrial Health and Hygiene, Medical Society of the State of Pennsylvania.

"The Conquest of Tuberculosis in Industry" —HERMAN E. HILLEBOE, Washington, D. C., Senior Surgeon, Medical Officer in Charge, Tuberculosis Control Section, States Relations Division, U. S. Public Health Service.

Tuesday Evening

STATE Societies Dinner and Round Table Discussion.

Wednesday Morning, February 16

THE New Movement in Industrial Sanitation" —MOHE E. SOLWORTH, Louisville, Kentucky, Sanitation Consultant.

"Health Education for Industrial Workers"—W. W. BAUER, M.D., Chicago, Director, Bureau of Health Education, A.M.A.

"Maladjustment in Industry"—FRANK F. TALLMAN, M.D., Lansing, Michigan, Director of Mental Hygiene, State Hospital Commission.

"The Story of Penicillin" — CHESTER S. KEEFER, M.D., Boston, Chairman, Committee on Chemotherapy and Other Agents, Division of Medical Sciences, National Research Council.

"The Detection and Treatment of Malnutrition Among Industrial Workers"—TOM D. SPIES, M.D., Cincinnati, Associate Professor of Medicine, University of Cincinnati College of Medicine.

SYMPOSIUM on Medical Service Under Workmen's Compensation.

"Medical Developments in Workmen's Compensation—1943"—J. W. HOLLOWAY, JR., Chicago, Director, Bureau of Legal Medicine, A.M.A.

"The Interdependent Problems of the Administrator and the Industrial Physician"—MRS. EMMA SANBORN TOUSANT, Boston, President, International Association of Industrial Accident Boards and Commissions.

"Disability Evaluation—The Solution in Wisconsin"—VOYTA WRABETZ, Madison, Wisconsin, Chairman, Industrial Commission of Wisconsin.

"Is the Present System of Occupational Disease Coverage Adequate?"—RUTHERFORD T. JOHNSTONE, M.D., Los Angeles.

"Second Injury Funds"—J. DEWEY DORSETT, New York City, Assistant General Manager, Association of Casualty and Surety Executives.

"Supervising Standards of Medical Service for the Injured Workman"—D. J. GALBRAITH, M.D., Toronto, Vice Chairman, Ontario Workmen's Compensation Board.

Wednesday Afternoon

SYMPOSIUM on the Rehabilitation and Reemployment of the Disabled.

"The Present Status of Rehabilitation in the U. S. Army"—FRED W. RANKIN, BRIGADIER GENERAL, U. S. Army, Washington, D. C., Chief Consultant in Surgery, and W. E. BARTON, MAJOR, M.C., Washington, D. C., Director, Reconditioning Division.

"Vocational Training and Placement of the Veteran"—FRANK T. HINES, BRIGADIER GENERAL, Washington, D. C., Administrator, Veterans Administration.

"State Plans for Rehabilitation"—MICHAEL J. SHORTLEY, Washington, D. C., Director, Office of Vocational Rehabilitation, F.S.A.

"The Place of the Compensation Insurance Carrier in the Field of Rehabilitation"—B. E. KUECHLE, Wausau, Wisconsin, Vice-President and Claim Manager, Employers Mutual Liability Insurance Company of Wisconsin.

"Current Developments Affecting the Physician's Role in Manpower Utilization"—CLIFHANMAN, San Francisco, Regional Staff, War FORD KUH, M.D., Richmond, California, Permanente Hospitals, Kaiser Shipyards, and BERT Manpower Commission.

"Community Organization for Rehabilitation and Reemployment" — HAROLD VONACHEN, M.D., Medical Director, Caterpillar Tractor.

SYMPOSIUM on Women in Industry (Arranged by the Committee on the Health of Women in Industry, Section on Obstetrics and Gynecology, American Medical Association).

"Report of the Committee on the Health of Women in Industry"—H. CLOSE HESSELTINE, M.D., Chicago, Chairman, Committee on Health of Women in Industry.

"Protection for Industrial Women—Progress and Prospects"—MISS MARY ANDERSON, Washington, D. C., Director, Women's Bureau, U. S. Department of Labor.

"Why Do Women Stay Away from Work?"—C. O. SAPPINGTON, M.D., DR. P.H., Chicago.

"A Practical Industrial Health Program for Women"—FRED B. WISHARD, M.D., Anderson, Indiana, Medical Director, Delco-Remy Division, General Motors Corporation.

Discussion Leaders: FREDERICK H. FALLS, M.D., Chicago, Professor of Obstetrics and Gynecology, University of Illinois College of Medicine; JENNINGS C. LITZENBERG, M.D., Minneapolis, Professor Emeritus Obstetrics and Gynecology, University of Minnesota Medical School; GOODRICH C. SCHAUFFLER, M.D., Portland, Oregon, Associate Clinical Professor of Obstetrics and Gynecology, University of Oregon Medical School.

Health Problems of Women in Industry

—Review: Comment—

MAX R. BURNELL, M.D.,
Medical Director, AC Spark Plug Division,
Flint, Michigan

HEALTH PROBLEMS OF WOMEN IN INDUSTRY, by C. O. SAPPINGTON, M.D., DR.P.H., Medical Series Bulletin No. VII, Industrial Hygiene Foundation of America, Pittsburgh 13, Pennsylvania, January, 1944, 40 pp.

FACTUAL reporting by an experienced and intelligent observer is frequently necessary in clarifying certain issues when divergence of opinion exists upon that subject. DR. SAPPINGTON'S report of his study of "Health Problems of Women in Industry" serves as an excellent example of how a thoughtfully prepared investigation may do away with much speculation and theorizing.

As Editor of INDUSTRIAL MEDICINE, DR. SAPPINGTON once said, "To assume without accurate knowledge involves an economic injustice." On another occasion, in reviewing "Industrial Eye Hazards," by the late DR. LOUIS RESNICK, he stated, "His were not 'swivel chair' tactics. In procuring material for his book, he personally visited many factories, mills, mines and small shops throughout the country where observations were made at first hand."

DR. SAPPINGTON'S brochure on "Health Problems of Women in Industry" was the result of similar personal study and observation. Under the sponsorship of the Industrial Hygiene Foundation, he visited 54 manufacturing institutions in 10 different states, interviewing physicians, personnel and safety directors, industrial hygiene engineers, nurses and women counselors, and actually observing working conditions.

This study published by the Industrial Hygiene Foundation in its Medical Series, Bulletin No. VII, is worthy of the attention of anyone concerned with the employment of women or those interested in health maintenance programs for the female worker.

In the foreword, JOHN F. MCMAHON, Managing Director of the Foundation, states the need of a factual study of the health problems of women in the industrial field and points out that "such a study is an example of industrial health research in wartime, conducted within the factory gates of America's industries."

Basic facts and figures listed in the introduction demonstrate the breadth of this survey. All types of manufacturing were included, from small arms and machine guns to the building of ships. Approximately 131,000 women were employed in these industries. The smallest factory visited had 320 employees, 77% of whom were women; the largest had 25,000, 52% of whom were women. Some of these companies had been in existence but two years, while others had been organized for 50 years.

The survey form used in the plan of study is given in the brochure. A great deal of thought is evidenced by the completeness of its detail. Everything is included, from a general statement of policy by the factory under observation; the medical features (equipment, physical examinations, placement, etc.) matron or counselor service; health maintenance, including attention to the specific problems of female employees (dysmenorrhea, pregnancy and the menopause) to the non-medical features where inquiry was made into personal and fatigue allowances; locker and rest rooms; absenteeism, transportation, etc.

No industrial physician, personnel or safety director, can read this survey form without wanting to apply this "yard stick" to the activities of his own organization.

The results of the survey are factual and do not lend themselves to a review opinion. It is to DR. SAPPINGTON'S summary and suggestions that we turn with interest. He concludes that, "In the absorption of women into industry, they cannot be taken for granted, neither should they be coddled, but the best results are forthcoming when ordinary politeness, courtesy and consideration are used. The industrial world is neither going to the 'damnation bow-wows' nor is there the necessity for segregating women workers behind barred doors and windows, as some protagonists would have us believe."

We in industry are indeed grateful to DR. SAPPINGTON and the Industrial Hygiene Foundation for this outstanding contribution to "industrial health research conducted within the factory gates of America's industries."

Carbon Disulphide

—Part 4 of the Literature Study of Reports of Occupational Diseases Attributed to Volatile Solvents—

H. P. QUADLAND,
Safety Research Institute,
New York

THIS study of the literature on carbon disulphide cases completes the series of studies of American cases of occupational injuries reported in the medical literature during the last 10 years as having resulted from inhalation of certain organic solvents.

Barthelemy, whose cases appear in the table following (*J. Indust. Hyg. & Tox.*, 1939, 21), mentioned briefly three additional cases with mental disturbances which occurred in the years 1929 and 1930, complete recovery occurring in four months. The reports of these cases did not lend themselves to analysis in the table.

It will be noted that the chemical, in the cases reported by Erskine (U. S. Dept. of Labor Bul. No. 34), is "presumably" carbon disulphide. These cases were selected from the records of state hospitals "in an effort to learn whether probable connection existed between their mental condition and their exposure to carbon disulphide previous to commitment."

In the table, the cases with a positive Wassermann reaction have been so indicated under "Remarks."

Only two of the 10 cases reported by Braceland (*Ann. Int. Med.*, February, 1942) are included in the table. The other eight appear to be among those reported earlier by Erskine, whose studies were submitted to Braceland for comment.

According to U. S. Labor Bulletin No. 14, the Department of Labor and Industry of Pennsylvania circulated a mimeographed report, in 1937, prepared by Cohn relating to carbon disulphide cases in two Pennsylvania towns. The report covered "four cases of conjunctivitis and two of bronchitis attributed to H_2S; two of skin lesions, five of accidental chemical injury, one of fatal tuberculosis and 25 of psychosis attributed to CS_2 poisoning." The original report of these cases could not be located for inclusion in this study.

AMERICAN CASES OF OCCUPATIONAL EXPOSURE TO CARBON DISULPHIDE IN THE MEDICAL LITERATURE SINCE 1932

Year	Circumstances	Chemical	Degree of Exposure Mg/L	Length of Exposure	Ventilation	Early Symptoms
*1933-1936	Workers in spinning room affected in three different years when concentrations of CS_2 high			Not stated		"None of the patients presented symptoms of poisoning, but each case had the following symptoms, varying only in degree: Intense photophobia, spasm of the lids, excessive tearing, intense congestion, pain, blurred vision, pupils contracted and reacted sluggishly, and the cornea was hazy and sometimes numerous blisters could be seen"
	(1933) 332 cases	CS_2 H_2S H_2SO_4	0.162 = 52.2 p.p.m. 0.041 = 29.5 p.p.m. 0.055 = 13.7 p.p.m.		Period of unusually heavy production, for which "ventilating facilities proved inadequate"	
	(1934) "Reduction in (above) cases to 85"	CS_2 H_2S H_2SO_4	0.122 = 39.3 p.p.m. 0.032 = 23 p.p.m. 0.043 = 10.6 p.p.m.		"Reduction in eye cases . . . was the result of the installation of a mechanical ventilating system. Prior to the winter of 1933, the ventilating system was based on the use of flues, which created natural draft"	
	(1936) Further reduced to 71 cases	CS_2 H_2S H_2SO_4	0.120 = 38.6 p.p.m. 0.032 = 23 p.p.m. Not made		Presumably mechanical ventilating system installed in 1934	
*1934—1935	40 women and male foreman in reeling room of viscose rayon plant	CS_2	Not stated	Stated only for individual cases below	"Antiquated plant . . . changed over into viscose rayon plant." Vapors regularly exhausted from churn room, less than 100 feet from powerful fresh air intake. Churn exhaust 30 feet above ground level and vapors, being heavy, tended to drop. Prevailing winds made certain "that some of the CS_2 vapors would be carried in front of the reeling room intake"	"Hysteria, yelling, fainting and acute psychoses"
	Case 1 Woman, 27			6 years		Headache, restlessness, weeping, screaming, faintness, loss of consciousness, spat blood, bloody bowel movements
	Case 2 Woman, 23			11 months		Dazed mentally, sleepiness, headache, dysesthesia
	Case 3 Woman, 33			2 years		Headache, visual hallucinations (Lilliputian and Brobdingnagian)
	Case 4 Man, 42, ventilator repairman			3 years		Chronic intoxication, headache, nausea, neuritic pains, considerable loss of vision
	Case 5 Woman, 32			Off and on for 7 years		Crying spells, vertigo, causeless rage, headache, double vision
	Case 6 Foreman, 49			Not stated		Headache, vertigo, causeless weeping, night terror, paresthesia in hand and feet
1938	120 workers of various ages, in 2 viscose rayon plants, average age 45 years	CS_2 and H_2S	Concentrations measured, but not reported in this reference	Men less than 40 years of age, exposed less than 10 years; those over 40 years, average 10.75 years.	Presence of gases in excessive amounts attributed to four primary causes: "(1) failure to install churns in superimposed position over viscose mixtures. "(2) Inadequate inclosure of churn room operations "(3) Leakage of gas from joints and gears in churn room. "(4) Inefficiency of mechanical exhaust ventilation in contaminated zones in both the churn room and spinning room."	Mental disturbances, talkativeness, causeless weeping, foolish laughter, nervousness, confusion, headache, eye disturbances, vertigo
1939	Male, 34, in churn room, viscose rayon plant	Presumably CS_2	Not stated	Not stated	Not stated	See "later symptoms"
1939	Male, 33, in churn room, viscose rayon plant	Presumably CS_2	Not stated	2 months, 8 days in viscose rayon industry; 6 weeks in churn room	Not stated	On admission to hospital, violent, unruly, hallucinations, assaultive, psychomotor excitement

*Year of occurrence; otherwise year reported.

AMERICAN CASES OF OCCUPATIONAL EXPOSURE TO CARBON DISULPHIDE IN THE MEDICAL LITERATURE SINCE 1932

Later Symptoms	Length of Illness	Consequences	Reported By	Remarks
Not stated	Not reported. "Quite a number of operators" were "obliged to quit working simultaneously"	"The acute symptoms subsided rapidly and the corneal epithelium regenerated without scarring"	BARTHELEMY, H. L., J. Indust. Hyg. & Tox., 1939, 21, p. 149	Cases in 1936 occurred from a small increase of concentration in a period of heavy production. No eye cases reported in 1935 or 1937, when concentrations were lower
Stated only for individual cases below	Not stated	Stated only for individual cases below	GORDY, S. T. & TRUMPER, MAX, *J.A.M.A.*, May 7, 1938, pp. 1543-9; TRUMPER, MAX, Proc. 9th Ann. Conv. Greater N. Y. Safety Council, April, 1938; TRUMPER, MAX, Indust. Med., April, 1943, p. 153	
Mental abnormality, vasomotor instability, secondary anemia, corneal anesthesia, paresthesia, hallucinations		Invalided, mental abnormality		
Acute pseudo-emotional disturbance, severe coma, psychotic behavior, retrobulbar neuritis		Invalided, mental abnormality		
Amblyopia, distorted vision, paresthesia of limbs and muscular weakness, paralysis of bladder		Invalided		
Retrobulbar neuritis, diminution of libido, chloroidoretinal pathologic changes		Invalided		
Paresthesia, corneal anesthesia, defective memory, chronic irritation of mucous membranes of nose and throat, loss of libido, hypotension		Invalided		
Depression, impairment of memory, impairment of libido, loss of initiative		Invalided, episodes of blindness		
Frequency of signs of nervous, mental and heart disturbances, expressed in percentages of workers: Peripheral nerve signs.....76% Cranial nerve signs (except for eighth and optic nerves).....75% Eighth nerve signs.....77% Psychic signs.....71% Optic nerve signs.....54% Cardio-vascular signs.....38% Tremor.....33% Brain stem signs.....21%	Not stated individually	Not stated individually. Expectation for full recovery reported "good as a rule but cure required months and, in severe cases, years"	Occupational Disease Prevention Bul. No. 46, "Survey of CS_2 and H_2S hazards in viscose rayon industry," Penna. Dept. of Labor and Industry	In this study 159 workers who were questioned reported various symptoms; however, only 120 reported for medical examination
Violent, destructive, incoherent, rambling, delusions, noisy, untidy	Hospitalized 12 days	Died from acute nephritis, probable cause: "Exogenous toxins connected with his work"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 67	
Impairment of vision, tremors of hands and tongue; slightly positive Romberg	Paroled after 3 months; discharged after 15 months	No return of symptoms	ERKSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 68	

AMERICAN CASES OF OCCUPATIONAL EXPOSURE TO CARBON DISULPHIDE IN THE MEDICAL LITERATURE SINCE 1932

Year	Circumstances	Chemical	Degree of Exposure Mg/L	Length of Exposure	Ventilation	Early Symptoms
1939	Male, 38, in churn room, viscose rayon plant	Presumably CS_2	Not stated	5 weeks	Not stated	On admission to hospital, acute psychosis, talkative, excited, delusions of grandeur
1939	Male, 62, washer in spinning room, viscose rayon plant	Presumably CS_2	Not stated	12 years	Not stated	On admission to hospital, talkative, excited, resistive (tube feeding), confusional, seclusive; pupils medium and irregular, sluggish to light
1939	Female, 23, in reeling room, viscose rayon plant	Presumably CS_2	Not stated	3 years	Not stated	Headache, vertigo, violent, resistive for 10 days after admission to hospital
1939	Female, 24, in reeling room, viscose rayon plant	Presumably CS_2	Not stated	7 years	Not stated	Upon admission to hospital, emotionally unstable, flight of ideas, hallucinations, manic excitement, violence reported
1939	Male, 50, in churn room and lead burner, viscose rayon plant	Presumably CS_2	Not stated	3 years	Not stated	Pain in head, dizziness, staggering gait, epistaxis, vomiting, giddiness, assaultive to family
1939	Engineer and repairman, 40, in churn room, viscose rayon plant	Presumably CS_2	Not stated	10 years	Not stated	Insomnia, persecutory delusions
1939	Engineer, 51, in churn room, viscose rayon plant	Presumably CS_2	Not stated	9 years, total	Not stated	Gradual physical break-down 1½ years; loss of weight, worry, fatigue, headache, restlessness, poor appetite, irritability, assaultive, suicidal, delusions
1939	Male, 39, in churn room, viscose rayon plant	Presumably CS_2	Not stated	5 years	Not stated	Resistive, maniacal
1939	Male, 45, in churn room, viscose rayon plant	Presumably CS_2	Not stated	Not stated, "attack in mill"	Not stated	Uncontrollable, destructive, homicidal, drugged
1939	Male, 33, in spinning and churn room, viscose rayon plant	Presumably CS_2	Not stated	5 years	Not stated	"In jail 1 month before commitment for shooting at wife"
1939	Male, 43, in churn room, viscose rayon plant	Presumably CS_2	Not stated	8 years total in viscose rayon employment	Not stated	Irritability, laid off because of quarrel 2 months before admission
1939	Male, 52, in pulp department and churn room, viscose rayon plant	Presumably CS_2	Not stated	20 months in churn room (6 years in viscose rayon industry)	Not stated	Loss of weight, spasms, irritability
1939	Male, 23, in churn room, viscose rayon plant	Presumably CS_2	Not stated	Not stated	Not stated	See "later symptoms" (two earlier attacks not described)
1939	Male, 29, in spinning room, viscose rayon plant	Presumably CS_2	Not stated	8 years	Not stated	Gradual onset of mental disorders, melancholy, unable to concentrate, irresponsible
1939	Male, 43, in churn room, viscose rayon plant	Presumably CS_2	Not stated	Not stated	Not stated	Began with change of temperament, threatening violence, attempted suicide

*Year of occurrence; otherwise year reported.

AMERICAN CASES OF OCCUPATIONAL EXPOSURE TO CARBON DISULPHIDE IN THE MEDICAL LITERATURE SINCE 1932

Later Symptoms	Length of Illness	Consequences	Reported By	Remarks
Slight positive Romberg, tremor of hands, some retrograde amnesia	3 months, 15 days	Recovered	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 68	
Tremors of tongue and fingers, articulation somewhat impaired, heart sounded somewhat impaired; memory poor	4 months, 10 days (had experienced an attack 2 years before)	"Paroled in excellent condition"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 69	
Judgment and memory impaired, mild depressive trend	2 months, 14 days (had experienced similar attack while working in mill)	Paroled. "Good recovery"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 69	
Headache, vertigo, tinnitus, tremors of extended fingers, some depression, answers irrelevant, memory poor	6 months, 21 days	Paroled. "Recovered except that memory remained poor"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 70	
Marked Romberg, lateral and nystagmus, ocular palsies, slight optic atrophy, tremor of tongue and fingers	Committed for 2½ months (unemployable for 2 years before commitment)	Paroled	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 70	Commented on as "suggestive case" of CS_2 injury
Headaches, dizzy spells, tremors of tongue, fingers and facial muscles; loss of libido; syphilophobia	Committed 5 months, 5 days (attack gradual 6 months)	Paroled	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 70	Commented on as "suggestive case"
When recommitted 7 years later, marked depression to marked elation; tremors of fingers; slight difficulty in articulation, attacks of dyspnea, carotid and temporal sclerosis marked; auditory hallucinations	Full period not stated; paroled 4 months 5 days after first admission; recommitted after "6 years exposure"	In mental institution at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 71	
Ill-natured, assaultive, suspicious, resistive, pre-occupied, hallucinations of sight and hearing, delusions	Away from work 8 weeks after first attack; unemployable for 2 years after second attack; third attack "after getting overheated"	Still "unemployable" at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 71	
Ideas of persecution, memory impaired, vision somewhat impaired, numbness of left arm, all deep reflexes decreased	Able to work outside after 3 weeks; paroled in 4 years, 4 months	Paroled "in good condition and able to resume work"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 72	Reported as "suggestive case" of CS_2 poisoning
Insomnia, great irritability, pupils unequal, numbness and atrophy of muscles of legs, knee jerks hyperactive, some reflexes diminished, blurring of speech, tremors of tongue, hands and feet; valvular endocarditis; pulmonary disease of right apex; arthritis	Attack gradual 9 months; committed 3 months	"Returned to jail in good condition to stand trial"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 72	Etiology: Alcohol, possibly syphilis (Wasserman negative); reported as "suggestive case, but not positive"
Brief auditory hallucinations; biceps, triceps, wrists, achilles, knee jerks absent; tremors of tongue; memory impaired; fluctuating mental condition	Not stated; gradual onset 2 years	In mental institution at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 72	
Depressed. threatening, violent, suicidal; knee jerks exaggerated; memory greatly impaired	"Acute onset 3 years ago" and unemployable nearly 2 years	In mental institution at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 72	Diagnosis: "Psychosis with convulsive disorders, possible epileptic deterioration, CS_2 gas possibly involved"
Committed to mental institution from jail, violent, maniacal, forcible feeding; manic depressive psychosis	4 weeks this time; first attack brief; unemployable for 1 year after second attack	Died. "Infection of wounds and pneumonia"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 72	
Probable psychomotor retardation, knee jerks decreased, tremor of fingers	Not stated; unemployable 3½ months before commitment; escaped from hospital twice	"Reported by letter . . . In good health. Returned to home after 6 months. Reemployed"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 73	
Confused, delusional, headache, vertigo, stereognostic sense impaired, disoriented, memory impaired	Psychosis began 9 months prior to commitment; hospitalized 2 yrs.	Discharged	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 73	

AMERICAN CASES OF OCCUPATIONAL EXPOSURE TO CARBON DISULPHIDE IN THE MEDICAL LITERATURE SINCE 1932

Year	Circumstances	Chemical	Degree of Exposure Mg/L	Length of Exposure	Ventilation	Early Symptoms
1939	Female, 38, reeler, viscose rayon plant	Presumably CS_2	Not stated	13 years	Not stated	Change of character, excessive fatigue, persecutory delusions
1939	Female, 27, reeler and inspector in finishing department, viscose rayon plant	Presumably CS_2	Not stated	12 years	Not stated	Depression, irritability, religious excitement, threatened suicide
1939	Male, 21, in spinning room, viscose rayon plant	Presumably CS_2	Not stated	5 years	Not stated	Worried, preoccupied
1939	Male, 32, in churn room, viscose rayon plant	Presumably CS_2	Not stated	9 years in this industry; 10 months in churn room, first time, 3 weeks in churn room second time	Not stated	Loss of weight, insomnia, assaultive, excited
1939	Male, 35, in spinning room, viscose rayon plant	Presumably CS_2	Not stated	9 years	Not stated	Collapsed at work, markedly confused, increase in psychomotor activities
1939	Machinist, 46, in charge of mixers, viscose rayon plant	Presumably CS_2	Not stated	9 years	Not stated	Extreme nervousness
1939	Male, 38, in spinning room, viscose rayon plant	Presumably CS_2	Not stated	12 years	Not stated	Speech alteration, dizziness collapsed in mill
1939	Male, 44, in churn room, viscose rayon plant	Presumably CS_2	Not stated	8 years	Not stated	Gradual onset of mental disorder
1939	Female, 43, reeler, viscose rayon plant	Presumably CS_2	Not stated	At least 10 years; probably 15	Not stated	Gradual onset of mental disorder, silent, withdrawn, temper erratic, refused food
1939	Male, 35, in spinning room, viscose rayon plant	Presumably CS_2 and H_2S	Not stated	7 years	Not stated	Worried, confused, refused to wash up or speak, stared at nothing
1940	21 workers, ages 24 to 67, viscose rayon industry — especially in churn and spinning departments	CS_2	Not stated	Not stated individually, average about 10 years	Not stated	90% showed lethargy, anxiety, irritability and vertigo 75% showed diminution or loss of libido 70% showed various degrees of neuropathy affecting extremities 67% showed subjective eye symptoms 55% had symptoms pointing to localized lesions 30% had vasomotor symptoms 30% showed blurring of optic discs More than two-thirds has gastro-intestinal symptoms, with high incidence of flatulence and anorexia. More than half showed varying grades of asthenia, headache, muscular stiffness, dyspnea
1942	Woman, 24, employed in printing of "decap" paper	CS_2 used in gelatinous coating	Not stated	5 weeks	"Dry room free from air currents"	Loss of appetite; giddy, drunken feeling, slightly hysterical, limbs felt heavy, depressed mentally
1942*	Man, 27, viscose rayon plant	Presumably CS_2	Not stated	5 weeks	Not stated	Acute onset; grandiose, excited, talkative, hallucinations
1942	Man, 30, viscose rayon plant	Presumably CS_2	Not stated	Not stated	Not stated	Acute onset; violent, noisy; destructive, confused, delusional

*Year of occurrence; otherwise year reported.

AMERICAN CASES OF OCCUPATIONAL EXPOSURE TO CARBON DISULPHIDE IN THE MEDICAL LITERATURE SINCE 1932

Later Symptoms	Length of Illness	Consequences	Reported By	Remarks
Insomnia, restlessness, delusional, irrational, headache, vertigo, slight tinnitus, reflexes decreased, slight tremors of face and tongue	Not stated; first changes began 2 years prior to commitment	Progress in mental hospital "unsatisfactory" at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 73	
Definite maniac state with definite elation, typical agitated depression, paresthesias at times, ocular palsies, tinnitus, vision slightly impaired, hallucinations, memory poor	1 month to date of report	Condition in mental hospital "unsatisfactory" at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 73	
Indifferent, hallucinations of hearing, incoherent, memory poor, deep reflexes exaggerated	5 years (unemployable 2½ months before commitment)	Died in hospital of pulmonary tuberculosis	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 74	
Admitted handcuffed from jail. Auditory hallucinations, pupils irregular, recent memory poor, weeps	Not stated	Not stated	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, pp. 75-6	Provisional diagnosis: schizophrenia (etiology; "possibly toxic psychosis"). "This case illustrates dramatically the danger of reemploying in the churn room a man who has a history of acute psychosis"
Excited, irritable, voluble, antagonistic, some vertigo, general paraesthesia; pain, touch, temperature and stereognostic senses absent; jaw, biceps, triceps and wrist reflexes absent; memory poor	5 months; (collapsed 2 months before commitment)	Paroled	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 74	Positive Wasserman reaction. 2 years later health reported by wife as "wonderful." Caretaker on an estate.
Insomnia, irritability, assaultiveness, increase of libido, hypochondriacal, memory poor, judgment impaired, tendency to start fires, headaches, vertigo, pains over sternum, tremors of tongue and facial muscles	5½ months; ("left employment at mill nearly 3 years ago because of extreme nervousness, employed elsewhere till 2 months before commitment")	Paroled "in fairly good condition"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 74	Positive Wasserman reaction
Confused, loss of coordination, triceps and knee jerks hyperactive, memory impaired, convulsions	Not stated; first evidence 8 months before commitment	Very satisfactory reaction. "Assisting with ward work 1 month, 17 days after admission" to mental hospital	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 75	Positive Wasserman reaction
Suicidal, assaultive, fear, staggering gait, delusions, hallucinations, unmanageable, pupils irregular, deep reflexes absent, marked Romberg, memory impaired	2 years, 10 months in mental hospital, "Unemployable 4 months before admission"	Paroled	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 75	Positive Wasserman reaction
Reflexes absent, unsteady gait, slurred speech, Babinski suggestive on right; tremors of fingers, tongue and facial muscles	Not stated; "normal until a year ago"	Apparently still hospitalized at time of report	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 75	Positive Wasserman reaction
Resistive, dull, confused, demented. Conversation irrelevant, tremors of tongue, fingers and facial muscles	9 months apparently; (had had an acute attack 2 years before)	"Latest report working outside"	ERSKINE, L., in "Occupational Poisoning in Viscose Rayon Industry" by Hamilton, Alice, U. S. Dept. of Labor, Bul. No. 34, p. 75	Positive Wasserman reaction. Clinical note: "Difficult to tell if condition is organic or schizophrenic, since he worked for 7 years in the spinning room of the.....plant we must consider the possibility of CS_2 poisoning"
See "early symptoms"	Not stated	Not stated	GORDY, S. T., Indust. Med., May, 1940, pp. 231-4	
Anuria	1 week	"Uneventful recovery"	JOHNSTONE, R. T., "Occupational Diseases," W. B. Saunders & Co., 1942, pp. 123-4	
Not stated	3½ months	Presumably paroled	BRACELAND, F. J., Ann. Int. Med., Feb., 1942, pp. 246-61	
Not stated	Not stated	Died of intercurrent infection	BRACELAND, F. J., Ann. Int. Med., Feb., 1942, pp. 246-61	

A Survey of the Effects on Menstruation of Working in a War Plant

MOREY PARKES, M.D.,
Medical Director,
Curtiss Wright Corporation, Propeller Division,
Caldwell, New Jersey

AS MEDICAL DIRECTOR of a large war plant, it has come to my attention that many women previously not troubled with menstruation have been seeking relief from the medical department at this period. A survey was therefore made on the female employees as to the effect working has on their monthly period.

Those included in the survey were picked at random throughout the shop. None of the work is heavy, but all of it involves a 48-hour week. The maximum weight allowed to be carried or handled at any one time is 20 pounds. For the most part the women who were questioned are standing all day, but the type of work they do was not taken into account.

The following survey form was distributed:

NAME_____ AGE_____ SINGLE_____
MARRIED_____ NO. of CHIDREN_____

1. How long have you worked here?_____Yrs._____Mos._____
2. How long was there between periods before working here? _____Days
3. How long is there between periods now?_____days.
4. What was the length of period before working here? _____days.
5. What is the length of period now?_____days.
6. Did you have pain during period before working here? Yes_____ No_____
7. Do you have pain during period now? Yes_____ No_____
8. How does quantity during periods before you began working here compare with quantity now? Greater_____ Same_____ Less_____
9. Did you have to lose time from job before working here? Yes_____ No_____
10. Do you have to lose time now? Yes_____ No_____ How much?_____

A similar survey was made on a few office employees whose work was naturally lighter. The form was distributed and personally supervised by women counselors while being answered. The survey only covers 214 shop employees, since only one shift was contacted. Only women who have been employed six months or longer were questioned. The following is a summary of the results.

1. 30%, or 54 women, stated that there was a longer interval or some other change between periods since employment.

2. 25%, or 54 women, stated that the length of their periods was greater now than before.

3. 14%, or 30 women, stated that they had more pain now than before.

4. 12%, or 26 women, stated that the quantity of their period was greater now than before.

5. 15%, or 33 women, stated that their average loss of time, prior to employment here, was one day. The same percentage are presently losing time, length of time lost being one day.

The above figures show that there is some change as a result of employment, although it is not too serious. If, however, the tendency is towards greater employment of women in industry, and, let us say that we have 2,500 women employed in our plant, it would mean that approximately 400 women would be losing one or more days each month. This would then be an appreciable loss of working hours.

It must also be considered that there is a possibility that after being employed in an industry for a longer length of time the change might be much greater. I believe some provision should be made for those women who are compelled to lose a day per month from their work. In many plants when an employee loses a working day that employee loses credit for overtime pay, and, to protect this bonus, many women undoubtedly work who should not be working. Of course there is the difficulty in women taking advantage of any provision which would enable them to collect overtime even though they lose a day and stay out even though they are not suffering.

However, I believe a check on their previous absentee record before any rule be set would indicate which women require a day or two off. This whole problem should be closely supervised and be under the direction of the medical department only. It is advisable to inform foreladies and women counselors to encourage women employees to discuss any problem concerning their period with the medical department.

For women who do not have to lose a day but have only moderate discomfort we would suggest a longer rest interval during the working day during the first 24 hours of their period, such as two one-half hour rest intervals. These women should be assured that this would be no reflection on their working ability should they find it necessary to take this time off.

Significantly in our survey of office employees, no change or disturbance in menstrual periods was noted. I, therefore, feel that the results found in the shop workers are definitely attributable to the stress of work.

In conclusion, I realize that the number of women contacted in this survey is small. This short paper was written to encourage similar surveys to be made in other war industries. Investigations of this subject should prove most valuable, particularly if they are detailed as to the types of work done.

SUMMARY: 1. A survey was made on the effects of working in a war plant on the menstrual cycle of female employees.

2. Significant changes were found in about 25 to 30% of women in shop work.

3. A similar survey on office employees showed no effect on the menstrual cycle.

4. Recommendations are suggested as to possible methods of handling these problems.

War Conference on Industrial Health

—St. Louis, Missouri, May 8-12, 1944—

THIS YEAR, as last, the War Conference will comprise joint sessions of the industrial physicians and surgeons and the industrial hygienists; and this year, for the first time, the meetings will also include the industrial nurses, convening with the doctors, and continuing over the week-end with their own business and general sessions.

The participating organizations are:

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS (28th Annual Meeting).

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (Sixth Annual Meeting).

NATIONAL CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (Seventh Annual Meeting).

AMERICAN ASSOCIATION OF INDUSTRIAL NURSES (Second Annual Meeting).

The Conference theme will feature the experiences industrial medicine and surgery has undergone by reason of the exigencies of war conditions; and there will be time for telling of the fine responses the field has made to the innumerable unexpected and urgent demands that have been put upon it, together with room for expression of the pride which those who have risen so ably and so often to one emergency after another may well feel in having so done. The exchange of experiences and ideas on the problems met and mastered, however, will be less important than the papers and

discussions on problems still unsolved. Among the latter, as an example, is the problem of the substandard individuals now employed—the hypertensives, the elderly, the cardiacs, the hernias, and those otherwise handicapped. There has been a considerable experience with all of these during the last few years, and the story, and the study, of this experience as it has been encountered in various kinds of employment will be of great interest. Another of the problems ahead is that of the absorption and re-employment of returned and discharged members of the armed forces who have suffered some disabling effect as a result of their war service. What is industry doing, and what more should it do, in the proper placement of these men? In addition to such topics as these, there will be much on surgery, hygiene, and nursing, and the growing importance of their place in industrial health in general. Altogether a Conference to be remembered!

DR. LOYAL A. SHOUDY is general chairman of the Convention and Program Committees. The War Conference schedule will be preceded by a six-day Seminar under the auspices of the Division of Industrial Hygiene, U. S. Public Service, May 3-8. This will be for engineers and chemists engaged in industrial hygiene work in official agencies, such as the Federal and state governments. The War Conference headquarters will be at Hotel Jefferson; and the exhibits alone will amply repay many a visit. Make reservations early!

FOR convenience in making hotel reservations for the "War Conference on Health and Rehabilitation" in St. Louis May 8-13, 1944, available hotels and their rates are listed below. Whenever possible, arrangements should be made for occupancy of rooms accommodating two or more persons; only a limited number of single rooms are available. All reservations are to be cleared through JOHN REINHARDT, Chairman, Housing Bureau, AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, 910 Syndicate Trust Bldg. (1), St. Louis, Missouri. All requests for reservations must give definite date and approximate hour of arrival also probable date and hour of departure, as well as names and addresses of all persons who will occupy reservations requested.

Hotel	For one person	For two persons		Suites
		Double bed	Twin beds	
American	$2.50	$3.50-$4.00	$5.00	
Claridge	3.00-$3.50	4.50- 5.00	5.00-$6.00	
Coronado	3.00- 5.00	4.50- 5.00	6.00- 7.00	
DeSoto	2.65- 3.65	4.00- 7.00	5.30-10.00	$10.00-$12.00
Jefferson	3.50- 5.00	4.50- 6.00	6.00- 8.00	12.00- 20.00
Lennox	4.00- 5.00	5.00- 6.00	5.50- 6.00	
Majestic	2.00- 2.25	2.75- 3.25	4.00	
Mark Twain	2.75- 3.50	4.00- 5.00	5.00- 5.50	
Mayfair	3.00- 3.50	4.00- 6.00	6.50	
Melbourne	3.70- 4.20	5.30- 6.30	5.80- 6.30	
Park Plaza			6.00- 9.00	12.00- 15.00
Roosevelt	2.50- 3.00	3.50- 4.50	4.50- 5.00	
Statler	3.00- 5.00	5.00- 7.00	6.50	
	Rooms for more than Two Persons			
Majestic	Rooms for 4 persons @ $6.00 per room			
Melbourne	Rooms for 3 persons @ $7.50 per room; for 4 persons @ $8.80 per room			

Central States Society

—Abstracts of Papers presented at the Annual Midwinter Scientific Meeting of the Central States Society of Industrial Medicine and Surgery, Chicago, December 3, 1943—

Reported by

C. O. SAPPINGTON, M.D., Dr.P.H.

THE ANNUAL midwinter scientific meeting of the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY was held in three parts, the morning session at St. Luke's Hospital with a demonstration of pathological cases and material, and a Fellowship luncheon at the Palmer House, followed by the afternoon session there, the subject being "Symposium: Intervertebral Disc Injuries," and the dinner session in the evening.

Morning Session

DR. EDWIN F. HIRSCH gave the pathological demonstration of three cases, presenting the history, the physical findings and the laboratory results with a diagnosis, followed, in each instance, with a demonstration of gross and microscopic pathological material and the anatomical diagnosis. The first case was a woman of 46 who showed metastatic tumor growths in the lungs, bones, glands and liver which were demonstrated by the pathological material. The second was one of coronary disease in a male of 54, the clinical course being detailed by the clinician. The anatomical lesions showed an old defect and a recent embolism of the coronary artery. The third and last case was a female of 75 who showed clinically ascites and edema with a diagnosis of cirrhosis of the liver which was confirmed pathologically.

DR. GEZA DE TAKATS spoke on "Sudeck's Atrophy." Early diagnosis is vital in this condition if cure is to be a possibility, otherwise the case becomes intractable. The condition has been previously considered a variety of osteoporosis, but it is not different from causalgia. Characteristic are the following: (1) disproportionate pain; (2) chronic vasodilatation; and (3) spreading neuralgia, coming from the periphery.

A case demonstration was given of a Colles' fracture occurring in a nurse; there were pain and numbness of median distribution occurring in five weeks after the fracture. The films showed very early osteoporosis. There was pain on slight stroking; increased temperature and a higher blood pressure of the affected arm; and the skin was much drier along the median distribution. It must be remembered in connection with these cases that the median nerve is injured in fractures in some instances. One injection of novocain has been given into the median nerve in this patient; it was considered that time is important in giving injections, before the pain spreads to the elbow and the shoulder.

In another case demonstration of a Colles' fracture occurring in a woman aged 76, the films showed a greater amount of osteoporosis than was seen in the first case.

In the discussion of these cases, it was stated that a true traumatic neuritis occurs and must be differentiated from a psychoneurosis, which actually may develop if treatment is not begun early. These patients have an ar-

Program

Morning Session, December 3, 1943

PATHOLOGICAL DEMONSTRATION — EDWIN F. HIRSCH, M.D., Associate Professor of Pathology, University of Illinois College of Medicine, Attending Pathologist, St. Luke's Hospital.

"Selected Remarks"—SELIM W. MCARTHUR, M.D., Professor of Surgery, University of Illinois College of Medicine, Chief of Staff, St. Luke's Hospital.

"Sudeck's Atrophy" — GEZA DE TAKATS, M.D., Associate Professor of Surgery, University of Illinois College of Medicine, Attending Surgeon, St. Luke's Hospital.

"External Fixation of Fractures—HERMAN W. WELLMERLING, M.D., Vice-President, CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, Bloomington, Illinois.

"Tendon Suturing Simplified; Finger Tip Amputations" — URBAN E. GEBHARD, M.D., Past President and Member of Board of Governors, CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, Milwaukee, Wisconsin.

Discussion, opened by FREDERICK W. SLOBE, M.D., President-Elect, AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.

Afternoon Session, December 3, 1943

SYMPOSIUM: Intervertebral Disc Injuries:

"The Neurological Point of View"—ROLAND P. MACKAY, M.D., Associate Professor of Neurology, University of Illinois College of Medicine.

"The Orthopedic Point of View"—H. HERMAN YOUNG, M.D., Section of Orthopedic Surgery, Mayo Clinic, Rochester, Minnesota.

"Recent Research on the Intervertebral Disc"—PAUL B. MAGNUSON, M.D., Professor of Bone and Joint Surgery, Northwestern University Medical School, and WILLIAM A. LARMON, M.D., Kemper Fellow of Industrial Surgery, Northwestern University Medical School.

Evening Session, December 3, 1943

COMBAT EXPERIENCES at Sea — LIEUT.-COM. JAMES W. SOURS, M.C., U.S.N.R.

"Abdominal Trauma in War and on the Home Front"—HARRY A. OBERHELMAN, M.D., Professor and Chairman of the Department of Surgery, Loyola University School of Medicine.

terial dilatation and a capillary contraction, accompanied by a hot, pale skin. Putting on a blood pressure cuff and pumping up beyond the systolic blood pressure relieves pain, since the vasodilatation element is restricted. The condition is aggravated by massage and heat, although cool whirlpool baths seem to relieve the pain; blocking by novocain and sympathectomy dilates the capillaries.

It is believed that the principle underlying the difficulty in these instances is the reflex vasodilatation. If the condition is allowed to persist for eight weeks or more, a psychoneurotic phase develops and there is then no adequate method of relief. In conclusion, it is believed that the degree of injury does not determine the causalgic state.

DR. HERMAN W. WELLMERLING discussed the subject "External Fixation of Fractures."

At the outset, the essayist emphasized Böhler's postulates in the treatment of fractures. Emphasis was placed upon the element of time, the promotion of good circulation, and the use of active and passive motion, as important principles in the therapy of fractures.

Slides and photographs of cases illustrated the use of pinning and external fixation. In multiple fractures, it is often best to insert the pins under local anesthesia, and immobilize the fragments, thus helping to relieve pain and shock. The promotion of good blood supply and healing is thus assisted.

In cases of acromioclavicular dislocations, Magnuson favors open reduction; Wilson believes, on the other hand, that most cases of this type do not necessitate an open reduction. X-ray films were shown of external fixation apparatus used with good results in this type of fracture. The apparatus has also been applied to large bones and in other types of treatment, including cases of non-union.

"Precision pinning"—of which a detailed discussion was included—permits an increase in local anesthesia. Particular attention is given in this method to the even distribution of pressure and the dispersion of leverage. The presentation was concluded by showing a colored motion picture demonstrating ambulatory cases.

DR. URBAN E. GEBHARD gave a brief discussion of (a) Tendon Suturing Simplified and (b) Finger Tip Amputations. (See INDUSTRIAL MEDICINE, January, 1944, p. 38.)

With respect to finger tip amputations, debridement is done, the nail is removed, and also 40 to 60% of the terminal phalanx is taken off by means of manicuring nippers. Vessels are tied with a single knot of chromic gut. A split graft is taken off the thigh about the size of a 25-cent piece, stitched and a wet dressing applied. Later (two to three days) a boric ointment dressing is applied with pressure. It is stated that 15 to 20% of the grafts are lost probably because of the enthusiasm for more frequent redressings than are really necessary and also because of wanting to look at the results of the operation.

THE LAST number on the program, by DR. FREDERICK W. SLOBE, was the opening of the discussion of the papers.

A series of x-rays on recent cases was presented, including fracture of the neck of the humerus three weeks old, a demonstration of the use of pinning and external fixation; fracture of the neck of the femur; and subtrochanteric fracture of the femur.

In the discussion which followed, it was pointed out that the method of pinning and external fixation has very distinct advantages, but we need to study the method and observe the results very closely. Good rapid x-ray service is a prime necessity. The use of many pins is justifiable, although such use presents some difficulty. Care must be used in drilling slowly. Dressings should not be changed more often than absolutely necessary—the fewer the changes, the better the results. It should be kept in mind that there is always some moisture or discharge; this does not mean infection necessarily and should not be cause for meddling. The x-ray may show some osteroporosis, which will likely disappear in time. It is of great importance to remember that all measures should be used which are capable of reducing shock.

It was agreed that one should not disturb a dressing on a graft. Although cases vary as to different procedures, a purse-string suture can be advantageously used when no bone is removed in the surgical treatment of finger tip amputations.

For tendon suture, stainless steel wire or tantalum has been used with good effect, except on flexor tendons or in palmar creases. Grafting appears to be necessary in certain locations.

With reference to moisture or discharge occurring around pins, Dr. Overton has found that compound tincture of benzoin is distinctly helpful in these locations.

Afternoon Session

DR. ROLAND P. MACKAY opened the Symposium on Intervertebral Disc Injuries, discussing "The Neurological Point of View."

Allusion was first made to the development of information during the past six or seven years, to the work of various investigators, and finally to the fact that the condition has been recognized as a definite clinical entity.

Lantern slides were used to illustrate the fact that extrusion usually occurs anteriorally and laterally. It is often seen in persons who go through severe exertion, but there are other instances in those who have not experienced severe physical effort.

Lipiodol studies are almost worthless, although the x-ray shows the narrowing of the intervertebral spaces. Cases occur without pain. Neurological diagnosis is considered more reliable than the use of opaque media in x-ray studies.

In the symptomatology, pain is the outstanding and usually initial symptom—this may be followed by weakness; pain radiates posteriorally along the thigh to the lateral aspect of the leg or foot and is typically lancinating; there is weakness of the tibialis anticus and the peronei; reduction or abolition of the ankle jerk, but not the external hamstring reflex; there is some diminution of sensation in the lateral aspect of the leg.

The bulk of extrusions occur in the lower lumbar region, involving the fourth and fifth lumbar or the fifth lumbar and the first sacral. It is difficult to localize these in the cervical region and much harder in the thoracic.

The irritative phenomena occur as pain, which may be paroxysmal with intervening paresthesia, which is not uncommon. Destructive phenomena may occur if pressure is severe and prolonged and are illustrated by hyperesthesia and reduction or abolition of reflexes.

The diagnosis is based upon the history of trauma, the type of pain, and repeated attacks demonstrating irritative or destructive phenomena. Differential diagnosis involves similar syndromes caused by hypertrophy of the ligamentum flavum, neurofibromata, inflammatory processes in the nerve, although usually such manifestations are not restricted to one nerve; in treatment, operation is not always a success—recurrent attacks have occurred after operation. A stabilizing operation should be done although there are no criteria for this as far as known—one should determine whether the fusion or other stabilization method is indicated.

In summary, symptomatology manifests irritative or destructive effects of the nerve root. Trauma is often associated. Removal of the disc with stabilization seems rational. This clinical entity is probably almost entirely an orthopedic problem.

DR. H. HERMAN YOUNG presented "The Orthopedic Point of View." This subject is not without controversy involving extremes of opinion from "no such thing" to "cause of all backache."

Low lumbar backache and sciatic pain are the most frequently encountered symptoms. In other locations, pain is produced according to the nerve groups involved. The removal of disc may often relieve backache and pain, although there are notable exceptions. A combination operation of removal and fusion is recommended, and is much more often used than other types.

A list of some of the causes of backache, emphasizing those usually occurring with protruding discs, was shown by lantern slides: of the spinal causes, there were men-

tioned (1) arthritis (rheumatoid, senescent); (2) traumatic (fracture, protrusion of disc, facet syndrome, arthritis at the junction of the fifth lumbar and first sacral, Kummel's disease); (3) various diseases, such as tuberculosis, osteomyelitis; (4) neoplasms; (5) congenital anomalies. Of the extra-spinal causes, muscular strain, pregnancy, gynecological conditions, kidney disease, cord tumors, poor posture, railroad spine, and coccydynia were noted.

Of the more specific causes of protruded disc, lantern slides were used to show the following: (1) narrowing of the intervertebral space; (2) thinning of the disc; (3) lumbosacral arthritis; (4) abnormal facets; (5) incomplete sacralization; and (6) spondylolisthesis.

The combined operation seems to offer the most advantage where the disc is protruded. The reports of results are incomplete, although some series show that the majority obtained complete relief (60 to 70%). Recently a group of 77 cases were traced and classified, 64% showing complete relief, called a good result; 25% showing partial relief, called a fair result; and 11% showing no relief, designated as failure. The reasons for failure were given as graft not satisfactory; infected graft; psychoneurosis; and compensation not settled.

Some figures were available on return to work after operation: 15 of 23 cases returned to hard work; 10 of 22 cases returned to light work; and 10 of 18 cases returned to housewife duties. These figures do not necessarily indicate that heavy labor cannot be done after fusion.

So far as known, there have been no recurrent disc protrusions after operation—this does not mean that it is not possible or that it has not occurred. Fusion cannot be advocated in all cases, because of insufficient new data. Conservation measures are always tried before operation.

DR. WILLIAM A. LARMON completed the symposium, discussing "Recent Research on the Intervertebral Disc." This was a discussion of the so-called typical case.

After occurrence of trauma, pain occurs in the region of the sciatic nerve or radiates down one leg, increased on cough or sneezing or from increase of intra-abdominal pressure. There is an involvement of the fourth and fifth lumbar and first sacral nerves. One must also search for soft tissue lesions. There is a delay in the onset of sciatic pain, occurring 10 days to two weeks after the injury.

Tabular array was shown of the sensory enervation of reflexes and a review of the anatomy involved in the lesions. Particular emphasis was placed on the angles of the articular facets at the lumbosacral joint and the possible pathology occurring in soft tissues around the joint. The possibility of traumatic changes occurring in the cartilage of the facet joints must not be overlooked, as in any weight-bearing joint, the knee for example.

As a part of the research conducted, the ganglia and the size of the foramina were measured on cadavers and were found to be a close fit normally; lipiodol injections were used for measurement and these were confirmed on live subjects. The degeneration of the disc appears to narrow the size of the foramen, even when protrusion has not occurred, and this narrowing also occurs because of the posterior lipping of the vertebra. There also may be a variation in the ligaments, and there may be inflammatory processes with consequent calcification which may alter the size and the shape of the foramina. It is, therefore, believed that the protrusion of the disc does not represent the sole mechanism of nerve pressure and its effects.

In the discussion which followed, DR. E. W. RYERSON believed that all cases should be fused if there are pain and symptoms on movement, regardless of whether there is extrusion or whether the disc is removed. If fusion is not done, symptoms will continue because of the mechanical, as well as other, changes.

Evening Session

LIEUT.-COM. JAMES W. SOURS, M.C., U.S.N.R., detailed, in a very interesting way, experiences during combat at sea. This included going over the side of a burning ship, provided with first aid kit, helmet, gas mask, taking care of burn cases later on. The medical officer becomes a real adviser and listening post.

The casualties included burns, chest injuries, sucking wounds of the chest, and the like. Elastic bandages were used for airtight dressings. Sulphathiazole ointment and drug, also by mouth, were both employed. There was no removal of pleural fluid. Wounds were flushed with sterile water and alkyl sulphate compound was used as detergent. Sulpha powder was sprayed on certain wounds. The use of antiseptics was only for psychological reasons. Plasma and morphine were administered for shock, with transfusion in some instances. Hemoglobin determinations were done, rather than the use of the haematocrit.

Burns were first cleansed and then sprayed with sulpha powder, a pressure dressing with vaseline gauze being applied; later mineral oil and sulpha powder emulsion were coated on tissue roll for direct application. Removal was accomplished by putting the patient into warm sterile water and the roll soaked off the skin.

In abdominal injuries, shock was first treated and opium given only when reasonably sure of contamination of the peritoneum.

Gas gangrene has seemed rare; all men had tetanus immunization.

The tropics seem to accentuate fungus disease, and colds are more persistent.

Malaria is a big problem, and causes more loss of time than casualties. Small doses of quinine are not effective. Both benign and malignant types occur, and also tertian and quartan varieties, sometimes finding both in the same smear. Malaria may mimic almost any disease and is, therefore, difficult for differential diagnosis in this respect. Quinine and atabrine have been used successfully. Some success has also been obtained by using neoarsphenamine. Penicillin is made and used effectively.

DR. HARRY A. OBERHELMAN brought the meeting to a close, discussing "Abdominal Trauma in War and on the Home Front."

Extensive experience with bullet wounds of the abdomen from 1911 to 1941 was the subject of this discussion. It was pointed out that of 175,000 casualties in World War I, 2% were abdominal wounds and, of the survivors to be treated, 10% of the mortality was thus accounted for.

Details of a case history of abdominal contusion were given, showing rise in temperature and pulse, increase of white blood cells, free blood in the peritoneal cavity on exploration, segment of bowel detached from the mesentery—this was treated by resection and end-to-end anastomosis, but the patient died on the tenth day because of embolism.

In another case of severance of the bowel by contusion, resection and end-to-end anastomosis were done, with recovery.

In another instance, a woman of 65 fell to the ground after stumbling on a street car step—at operation it was found that the ileum was split by indirect violence. There have also been several instances of chimney sweeps falling, and the bowel torn by indirect violence.

With respect to statistics on bullet wounds at postmortem, in a first group of 343 cases where mortality was 60%—42 were not operable. With the bullet coming from the back, there is the lowest mortality; with the bullet coming from the front, there is the next highest mortality; and with the bullet traversing the body from side to side, this produces the highest type of mortality. Probably 20% single organs were injured, but most were plural injuries of organs. Small bowel perforation showed the highest mortality. Single injury to the pancreas has not been seen in this series, and the same with respect to the spleen—there is a high mortality in both. Only one kidney injury has been observed. DR. OBERHELMAN is now working on another group of 535 cases. Most important is the reduction of mortality from 61 to 50%—there has been no selection of cases; they were taken as they occurred.

Immediate laparotomy is the procedure of choice, if expedient. It is believed that mortality will always be high because of injury to blood vessels. The cases die from shock and hemorrhage. Above all, one must not forget to examine for torn bowel, for the purpose of resection before needlessly sewing up various bullet holes.

Records

—The "Seeing-Eye" of Industrial Medicine—

THE QUICK and widespread response on the part of our readers to DR. FULTON'S comprehensive article on "Records" last month (INDUSTRIAL MEDICINE, January, 1944, pp. 1-35)—particularly as to the innumerable overtones of practical uses which were both specific and implicit in the text—suggests the following repetition of the "Explanatory Notes" placed, this time, side by side with the forms to which they refer:

YEARLY AVERAGE: DIRECT HOSPITAL SERVICE

Per Employee Per Year	3 Shifts Rotating 6 Day—48 Hr. Wk.		One Shift Day Only 5 Day—40 Hr. Wk.
	Women	Men	All Men
Injuries	7.41	7.27	6.89
Medical Complaints	8.59	5.20	4.18
Sick Absenteeisms (Any Duration)	4.99	2.37	1.72
Total	19.97	14.11	12.80
Combined Total		16.46	

REQUEST FOR PHYSICAL EXAMINATION

DATE May 21, 1939

NAME JOSEPH M. GIBOROROWSKI

REPORT TO THE MEDICAL DEPARTMENT 10:00 A.M. / P.M.

Periodic Examination

DEPARTMENT Body Shop FOREMAN Draper

RATING PHYSICAL	RATING WORK	HEIGHT	WEIGHT	AGE	VISION GLASSES R	VISION GLASSES L	VISION R	VISION L	COLOR VISION	1 S	2 C	3 SA	4	5
A	M	67	148	28	25	28			KEYSTONE — CLASS B	V BA	AA	A		

EXAMINER'S NOTE Condition improved over 5/7/38. Medical complaints and sick absenteeism markedly less. Safety record remains bad. Safety director and foreman consulted.

Left handed individual

Wm. J. Fulton M. D.

REQUEST FOR PHYSICAL EXAMINATION (Fig. 26 in Text)

Joseph M. Giborowski
EMPLOYEE'S SIGNATURE

PHYSICAL EXAMINATION RECORD—MEDICAL DEPT.
EASTERN AIRCRAFT—BALTIMORE DIVISION
GENERAL MOTORS CORPORATION

DATE EXAMINED	RATING PHYSICAL	RATING WORK	HT.	WT.	AGE	VISION GLASSES R	VISION GLASSES L	VISION R	VISION L	COLOR VISION	HEARING R	HEARING L	BLOOD PRES.	PHYSICAL DEFECTS MAJ.	PHYSICAL DEFECTS MIN.	1	2	3	4	5
9/30/36	A	H	67	151	25	20	20						120/70		2					
10/4/37	A	H	67	153	26	20	20						130/80		2	OS	OS	BA		
5/7/38	BA	M	67	144	27	25	25						114/72		2	BA	BA	BA		
5/21/39	A	M	67	148	28	25	28						130/80		2	BA	AA	A		
5/16/40	A	A	67	152	29	35	40						130/80		1	A	AA	AA		
5/8/41	AA	H	67	158	30	35	40	20	20				130/80			AA	OS	OS		
4/15/42	OS	H	67	160	31	30	35	20	20				130/82			OS	OS	OS		

LIST PHYSICAL DEFECTS NOTED AT FIRST EXAMINATION
Infected Tonsils 8/14/39
Teeth poor 5/1/41

IF SUBSEQUENTLY CORRECTED CROSS OUT AND NOTE DATE

EXAMINER'S NOTE AND SIGNATURE
General physical condition seems good. Well developed. Tonsils are quite large and appear infected. teeth need attention. Advised re tonsils and history of frequent sore throat.
9/30/36
WF-KC SIGNED BY: Wm J Fulton M.D.

COLOR HAIR Brown | COLOR EYES Gray | S | M | W | D | NUMBER OF CHILDREN 1 | RACE W | WASSERMANN BLOOD TEST Neg 8/36 3CHO | LEFT-HANDED? X

NAME LAST GIBOROROWSKI, FIRST Joseph MIDDLE Melvin | SOCIAL SECURITY NO. 216-01-507 | DATE FIRST EMPLOYED Oct. 1, 1936

SCARS—DEFORMITIES | PSYCHOLOGY
PERSONAL HYGIENE | URINE

RECORD BRIEFLY ONLY THE POSITIVE ANSWERS TO THE FOLLOWING QUESTIONS, NOTING THE DATE, PLACE, CONDITION AND ANATOMY

HAVE YOU EVER HAD AN OPERATION?
FRACTURED BONES?
SERIOUS ILLNESS OR INJURY? Pneumonia, March 1931 Mercy Hospital, Baltimore, Maryland
OCCUPATIONAL DISEASE?
ANY ALLERGY?
HAVE YOU ANY CHRONIC TROUBLE? sore throat often
WHAT WAS YOUR LAST OCCUPATION? Truck Driver

EXAMINERS' SUBSEQUENT NOTES WITH DATE AND SIGNATURE

Oct. 4, 1937 - General condition as of 9/30/36. Has a coryza at present. Tonsils inflamed-advised. Wearing bad working shoes - advised. Safety and medical complaint record very good. Has lost much time because of sickness. WF-KC 10/4/37

May 7, 1938 - General condition is below average. Loss of weight. Vision has declined. Safety and complaint record below average. Sick absenteeism bad - lost time due to colds and sore throat. Advsied re vaccines - to consult family physician. WF-KC Personnel Department consulted re - safety record. 5/7/38

PHYSICAL EXAMINATION RECORD (Fig. 27 in Text)

Explanatory Notes Relative to the Physical Examination Form. Some Correlations Between and Applications of These Records

THE COLUMNS numbered 1, 2, 3, 4, 5, on the Physical Examination form correspond with those on the Request for Physical Examination form. The "S," "C" and "SA" on the latter form, stand for "Safety," "Medical Complaints" and "Sick Absenteeism" respectively. The ratings in these three departments are indicated in these first three columns on both forms. The additional columns 4 and 5 are for possible future use.

To demonstrate the cooperation of Medical Records with Employment, Safety and Personnel Departments, compare and correlate the following:

The Data, Ratings and Notes on both the Physical Examination record and Request for Physical Examination form on the date of May 21, 1939, with the entries of and prior to May 21, 1939, on the Index and Absent Records.

Do the same with the note of May 7, 1938, on the Physical Examination Record and the entries of and prior to May 7, 1938, on the Index and Absent Records.

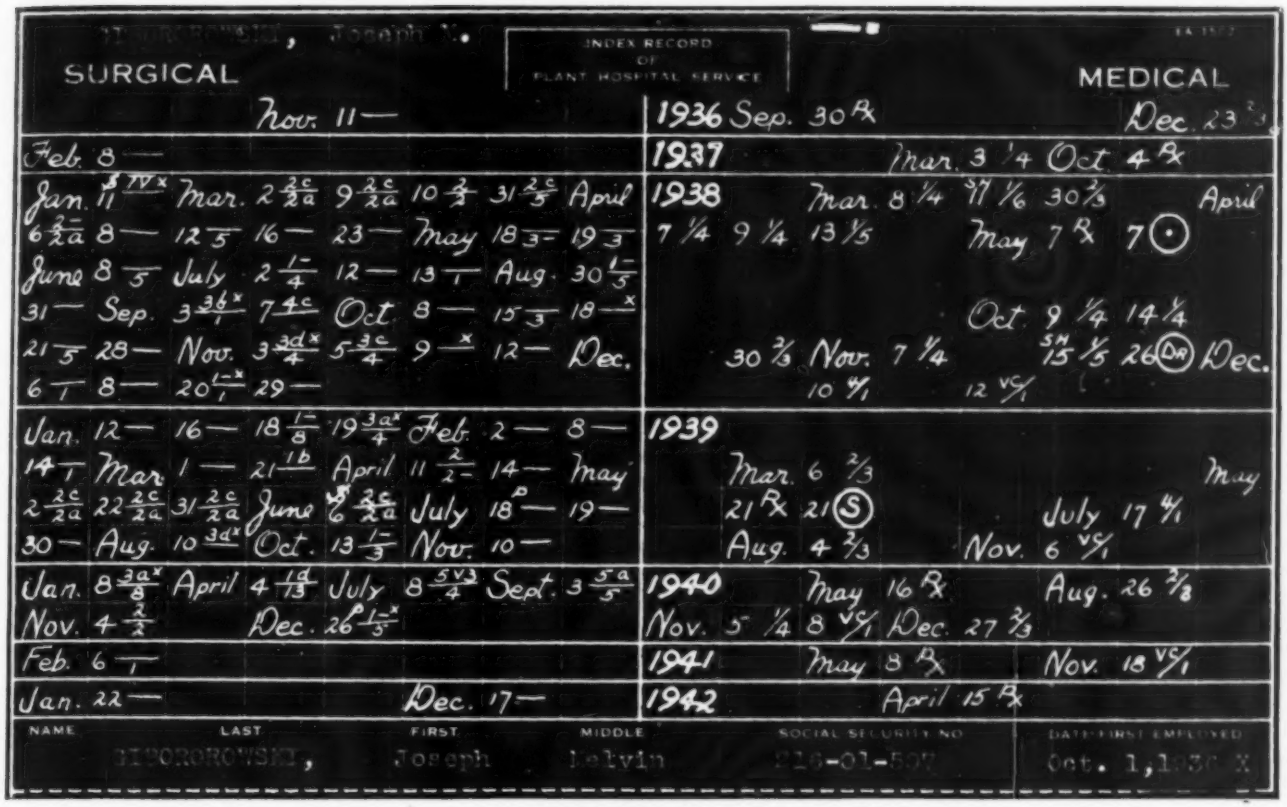
Rating the Employee in Safety, Medical Complaints and Sick Absenteeism

COMPARE the volume of entries on the Index and Absent Records prior to the date of each physical examination with the table of Yearly Average to justify all ratings in Safety, Medical Complaints and Sick Absenteeism.

Measuring Therapeutic Effect and Value

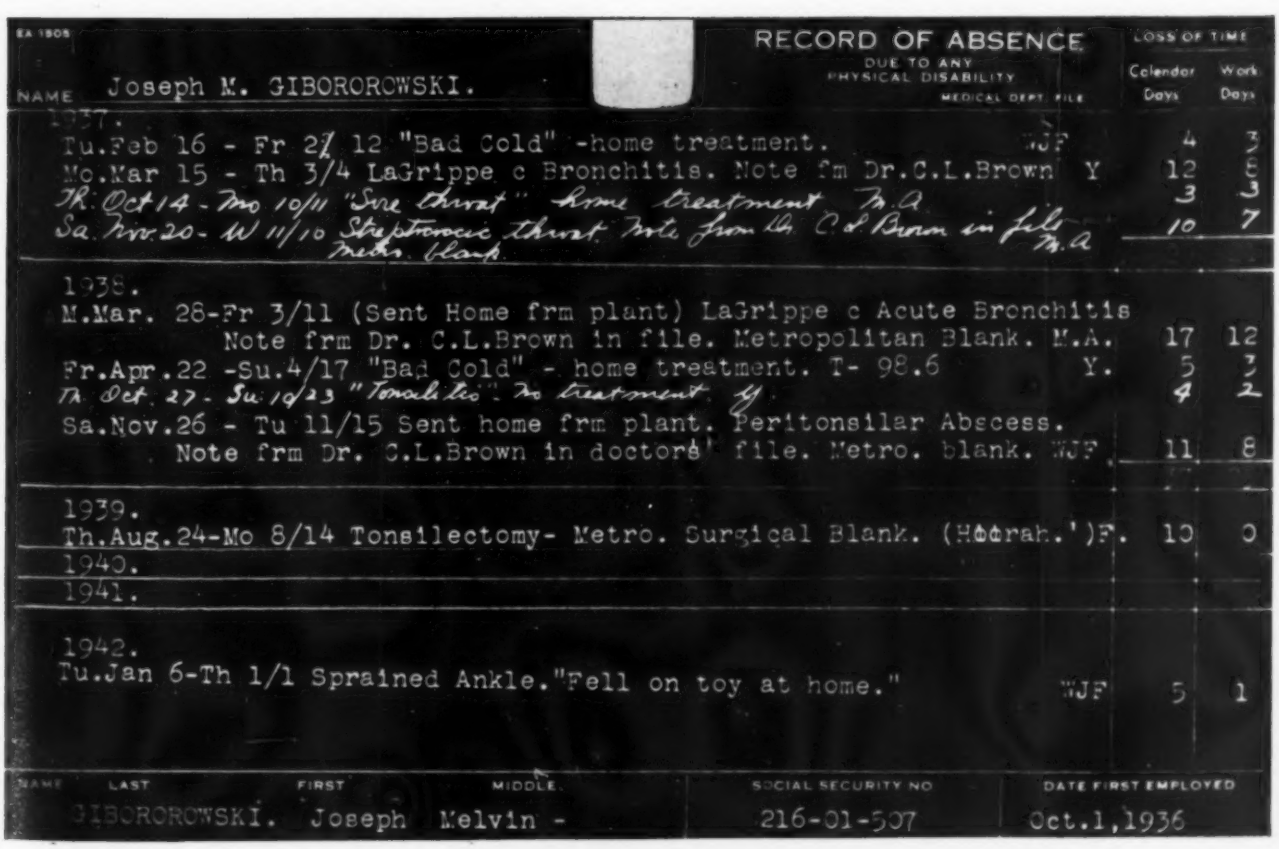
EXAMPLE—On the Medical side of the index record on the date of December 12, 1938, is the symbol vc/1 which indicates the beginning of a course of hypodermic catarrhal respiratory vaccine. Now compare and tabulate the number of Medical Complaints and Absences on the In-

[NOTE: The Medical Code used has been greatly simplified since 1941. Prior to 1941 all of the upper respiratory and allied conditions were designated by the numeral 1 superimposed over other numerals, i.e., 1/4 Cold; 1/5 Acute Tonsillitis; 1/6 LaGrippe.]


INDEX RECORD OF PLANT HOSPITAL SERVICE
SURGICAL
MEDICAL
NAME LAST FIRST MIDDLE SOCIAL SECURITY NO DATE FIRST EMPLOYED
GIBORORowski, Joseph Melvin Oct. 1,1936

INDEX RECORD (Fig. 21 in Text)

dex and Absent records due to upper respiratory and allied conditions before and after that date. This method of analysis applied to this type of recording will produce very definite answers to the questions of therapeutic value and effect. This illustrates point No. 3 in the discussion of the values and varieties of application of this combination of individual records, namely, (3) *"The value of any therapeutic or safety measure can be swiftly and accurately evaluated, individually or collectively, the conclusions having the added weight of large numbers, backed by records of other individuals that constitute controls."*


RECORD OF ABSENCE
DUE TO ANY PHYSICAL DISABILITY
MEDICAL DEPT. FILE
LOSS OF TIME
Calendar Days
Work Days
NAME Joseph M. GIBORORowski.
1937.
Tu.Feb 16 - Fr 2/ 12 "Bad Cold" -home treatment. WJF 4 3
Mo.Mar 15 - Th 3/4 LaGrippe c Bronchitis. Note fm Dr.C.L.Brown Y 12 8
TR. Oct 14 - Mo 10/11 "Sore throat" Home treatment M.A 3 3
Sa. Nov. 20 - W 11/10 Streptococcic throat. Note from Dr. C. L. Brown in file Metro. blank. M.A 10 7
1938.
M.Mar. 28-Fr 3/11 (Sent Home frm plant) LaGrippe c Acute Bronchitis
Note frm Dr. C.L.Brown in file. Metropolitan Blank. M.A. 17 12
Fr.Apr.22 -Su.4/17 "Bad Cold" - home treatment. T- 98.6 Y. 5 3
Th Oct. 27 - Su 10/23 "Tonsilitis" No treatment. Y 4 2
Sa.Nov.26 - Tu 11/15 Sent home frm plant. Peritonsilar Abscess.
Note frm Dr. C.L.Brown in doctors' file. Metro. blank. WJF 11 8
1939.
Th.Aug.24-Mo 8/14 Tonsilectomy- Metro. Surgical Blank. (Hoarah.') F. 10 0
1940.
1941.
1942.
Tu.Jan 6-Th 1/1 Sprained Ankle."Fell on toy at home." WJF 5 1
NAME LAST FIRST MIDDLE SOCIAL SECURITY NO DATE FIRST EMPLOYED
GIBORORowski. Joseph Melvin - 216-01-507 Oct.1,1936

ABSENT RECORD (Fig. 25 in Text)

Industrial Medicine
Reg. U. S. Pat. Off.

The Journal of
Industrial Health, Traumatic Surgery and Occupational Diseases
Established 1932
Executive, Editorial and Publication Offices:
605 No. Michigan Ave., Chicago.

Editor: C. O. Sappington, M.D., Dr. P.H.
Associate Editors:
James T. Case, M.D., F.A.C.S.
Volney S. Cheney, M.D., F.A.C.S.
Bradley L. Coley, M.D., F.A.C.S.
Hart E. Fisher, M.D., F.A.C.S.
Otto P. Geier, M.D.
Lydia G. Giberson, M.D.
Emery R. Hayhurst, M.D.
Edward C. Holmblad, M.D., F.A.C.S.
Rutherford T. Johnstone, M.D.
Willis W. Lasher, M.D., F.A.C.S.
Robert T. Legge, M.D., F.A.C.S.
Christopher Leggo, M.D.
Oscar L. Levin, M.D.
Wm. D. McNally, M.D.
M. N. Newquist, M.D.
Frederick W. Slobe, M.D., F.A.C.S.
Publisher: A. D. Cloud.

Volume 13 FEBRUARY, 1944 Number 2

Keep Good Records!

THE injunction to "Keep Good Records" may have been urged upon medical departments so often as to have become trite, but it is even better advice now than when it was first given. There are several reasons. One, and probably the most important, is in the values that good records produce. Some of these values have been understood and appreciated, for many years, but it seems to have remained for DR. FULTON in his particular employment situation to develop a number of the most outstanding in a manner and with the effect to stimulate a desire to do the same thing in other situations. Nothing can be added to his superlative analysis by summarizing his methods or their results. (See INDUSTRIAL MEDICINE, January, 1944, pp. 1-35, and pp. 154-155 herein.) But some things he said may well be repeated, particularly as to his stop-watch studies of 10,000 cases of all types of hospital service, enabling him to assign 10.29 minutes per case for direct medical service, and 1.28 minutes per case for indirect, the latter including the necessary paper work and recording—from which it is apparent that one nurse or attendant can give *good quality* service to not more than 41 cases per eight-hour day. And his general rules evolved: (1) that in shifts of eight hours or more, each 120 man-hours will produce one direct service case; (2) that in any shift, each 15 employees will produce one direct service case; and (3) that 615 employees in one shift will produce enough direct service cases to keep one nurse or attendant completely occupied. To be able to demonstrate such things is alone worth all the effort required to handle the necessary detail. But these are only a few of the values; the ease of identification and follow-up, the development of data as to causes, in form—and in time—to head off effects, and the facility with which the cooperation of other departments can be secured and availed of are some more, to say nothing of the relations to community health and the ability to coordinate with national health which are inherent in such a system as he has devised. Then, too, there are the almost countless other possibilities for group statistics, analyses and comparisons implicit in his descriptions, many of these having a direct bearing on prevention, and all aimed at the goal of a real maximum of industrial health.

Another reason, hardly distinguishable from the foregoing—because it will be inevitably available from good records which are really *good*—is the information that will come to light on the placements, terms of service, capacities and consequences involved in the employment of substandard individuals, "the hypertensives, the elderly, the cardiacs, the hernias, and those otherwise handicapped," as well as some of the service rejectees, and the returning disabled. There has been a deal of opinion regarding these; and many medical directors—who, with misgivings born of the long habit of excluding them, have watched them taken on because there was no one else to hire—are now not so sure that most of them can't be used in normal times, to some extent at least, provided they are properly placed. *This* value of good records is the value of opportunity; for thus far nobody really knows—the experience is in the making, having, indeed, only begun.

And a third reason for good records is the fact that every current injunction to keep them contains a warning. Insurance men are already sensing the first signs of a veritable deluge of compensation claims, particularly on the part of women. Some will admit that, in certain respects—such as "breast cancer," for example—the deluge will be accompanied with all the characteristics of a racket. And medical men generally are by no means happy—seeing so many employees taken on without the time to make the kind of physical examination that would tend to forestall or be adequate to counter false or exaggerated claims. Under such circumstances, records will have to be a compromise between what the physician knows to be "good" and what it is possible for him to make.

"God Give Us Men!"

PROFESSOR MCFARLAND, whose "Medical Program for Aviation" *(Harvard Business Review)* is quoted twice in these pages, says: "Physicians, as a group, have a wide background of knowledge in various fields, and they have spent many years of their lives in advanced study." Thus they have learned to *think*, and they *do* think, or they could not keep up in their profession. Unfortunately, however, their professional duties too often leave no time for their thinking to extend to any other fields, let alone the many others in which they have knowledge. But this is a period when, probably more than ever before, it behooves all men who *can* think, and especially professional men, to do some earnest mentalizing with regard to certain matters of general and community and national interest. Two of these matters are history and economics—the first in respect of the kind of history this country is making, and the second as to the kind of economics our American way of life is being regimented into. Are we, as

To Safeguard INDUSTRIAL WORKERS

"Your purchase of Christmas Seals makes this chest x-ray service possible."

So reads the inscription on this mobile photo-roentgen unit, sponsored by the Los Angeles (City and County) Tuberculosis and Health Associations.

Thus the threat of an increase in tuberculosis in wartime is effectively met. Similar G-E equipped units are rendering a like service in all parts of the country, surveying not only industries but entire populations, including sparsely settled areas. And they are doing this economically, because the G-E Photo-Roentgen Unit employs 4 by 5-inch films instead of 14 by 17-inch x-ray films. Efficiently, too, since these 4 by 5-inch films are sufficiently large to permit study without magnification.

There is no mistaking the definite trend toward a more far-reaching, thorough, and effective tuberculosis control measure with this x-ray laboratory on wheels, the need for which extends far into postwar years.

Write for Reprint Set No. D12, *of authentic articles citing the results of extensive surveys by this method.*

Today's Best Buy – U. S. War Bonds

GENERAL ELECTRIC
X-RAY CORPORATION
2012 JACKSON BLVD. CHICAGO (12), ILL., U. S. A.

MR. PRENTIS warns (page 174), about to yield spinelessly to the influences that will deliberately shorten our national "life-cycle" in its period of freedom between tyrannies? Are we willingly to submit to the cock-eyed economics that is built on taxation to sustain unproductive government jobs to perpetuate the power of those who make such jobs a sop-substitute for self-supporting industrial employment? If we are not it will be only because the men who *can* think *do* think now. And follow up with some talking, and some writing to Congressmen. There have been other periods in our national history when those in high places were trying to put things over. One such brought out the following: "God give us men! The times demand strong minds, great hearts, true faith and willing hands. Men whom the lust of office does not kill! Men whom the spoils of office cannot buy! Men who possess opinions and a will! Men who have honor; men who will not lie! Men who can stand before a demagogue and damn his treacherous flatteries without winking; tall men, sun crowned, who live above the fog in public duty and in private thinking!" God gave the men then —Lincoln was one of them. Where's *our* Lincoln? We hope he's on his way; but if those who *can* think—regarding national, and therefore community, and equally therefore personal, matters—do not start thinking immediately, who will there be to recognize him when he comes?

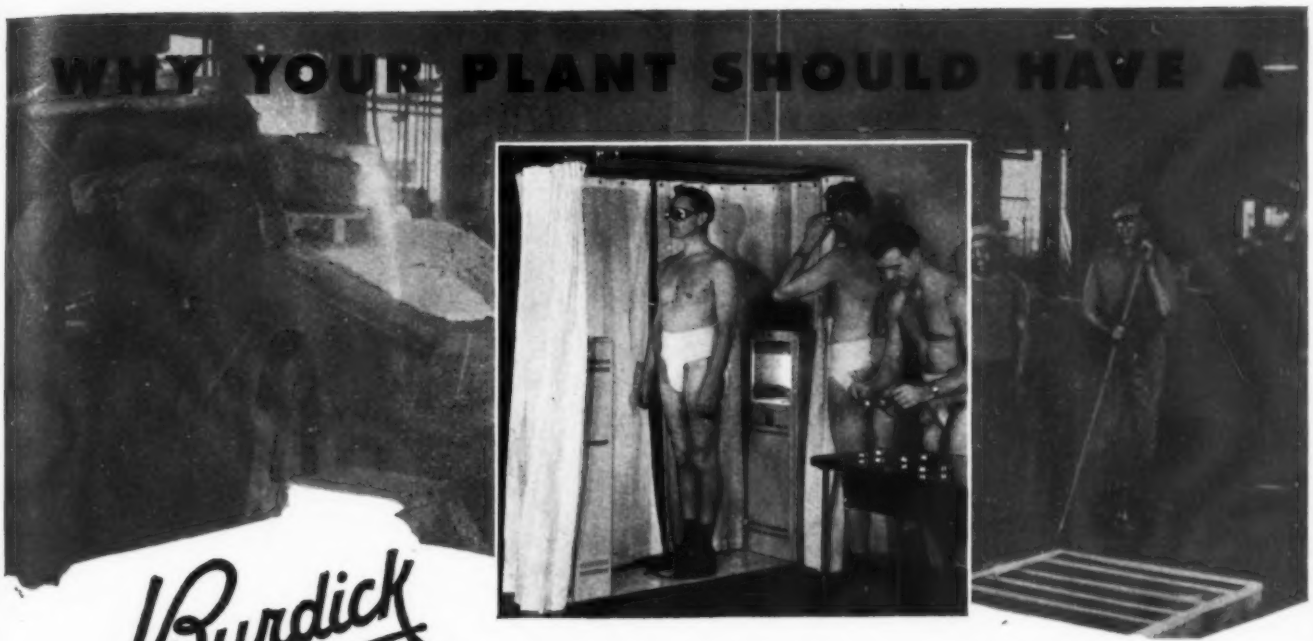
DR. PILGRIM

WHO that goeth on a journey but would have a note-pad about him, that he may look, when he is at a stand, and recall the company he was in, and what it was that he did, in the whiles he spent among the places he had been? No one but he who cares not to give those who desire it an account of what he is elsewhere silent about. For such as want it, then, a brief—as to which, for those who desire it not, they may pass it over.

In the month of the first day of the winter that is now upon us I had me to a medical department esteemed for the service which those who depend upon it are given when they come to it. Whereas I had somewhat wondered because of its good repute, I did but compare it to the excellence I have described on many occasions of discourse with much of "ought" and "should," and found its fame no whit too highly held. Thereafter I had me to a mine in Tennessee, whereat the complexities of the work that is done by man—the which were matters of counselling—were puny dots against the works of Him who made the world. Then to Cincinnati, advising on men and medicine in places of employment. After this, and home, to lecture to industrial nurses on the ills of occupations, and heartening it was to see their eager interest. Thereupon was time required for the notes anent industrial hygiene set down at Pittsburgh to be got in order, whereof the variety of subjects gave delight, so that they were duly prepared against the "dead-line" date for their printing. Also the notes of the Central States meeting which, by name, was "Mid-Winter Session" on a day while it was yet the autumn, and amongst the surgeons at which there was much differing of opinion on fusing of the spinal column in extruded discs. Some would and some would not, wherein the opinions were good on both sides insomuch as they were none amiss on experience. Again lecturing to nurses, where I was loath to leave when the time for departure arrived, so intelligent they were in questioning and agreeable in manner.

A day soon after there came a distinguished visitor, DR. W. E. CHIESMAN, from England, to talk of the new *British Journal of Industrial Medicine*. Another day, and I had me to a nearby county whereof the medical society would hear me discourse on matters of industrial health, from whence I returned beset with the strong impression that the average doctor in private practice is yet lukewarm on things industrial. After this a journey to a foundry of great size, where they contrive the engines of war that are huge and terrible, and where there was large colloquy on the efficacy of aluminum in preventing silicosis. There was likewise the fashioning of a film on health, whence grew the urge to think upon the lag between the getting of knowledge and the using of it. Also were there studies among tubes and slides, as to which came in mind good words of DR. FULTON, in his piece on "Records," whereof he said: "The study of one problem points to others, and frequently opens new fields of research." And so the month drew to end, and with it the year, and there was reunion with a brother and his family, and music and making merry, and recollections inspired by old tunes, and records which turned memory back to pleasant occasions, not least of which was the Bohemian Grove play in the year of '37. It was a twelvemonth of great going and coming, wherein the journeys made a sum of miles to many thousands, and the medical departments visited were a full three-score in the number thereof. The quest for learning anent the problems of the woman at her place of work was the reason of many travels, for it had been appointed to me by Industrial Hygiene Foundation to study this matter and tell them of it. Wherefrom a multitude have sought to read and hear of the findings, so that there is the feeling to have been of help, however small, in the great effort of the country on my own account the while my son is in the Army.

THE first day of the new year I had me to my notes and, starting them, did write the date thereof, with due regard for 1944 A.D., whence came the hope that it may verily resolve in victory and peace as the "Year of our Lord," indeed. Being, what time the complexities of business will allow me, of a mind to music, there was the concert of the Business Men's Orchestra, wherein my instrument was mostly hushed the while the master pianist, Percy Grainger—a master still despite his years of one above three-score—did play the Grieg concerto, its second movement seeming akin to prayer. And back again to work, the problem of absences from their tasks among the women growing less easy to solve as it more partakes of a likeness to the whole problem of human conduct. Then to a foundry, likewise large, and full of things that give one pause wherein to marvel, the resourcefulness and ingenuity of man being so well shown—to make this age, of truth and verity, an "engine-handed" era. After this to my lecturing, this time to medical students, most in uniform. Wherefrom I took departure loath indeed, they showing more intelligent interest than ever fell to me as teacher in the 17 years my lot has been so cast. And lately to a meeting of industrial physicians and surgeons, at time and place ordained by the Chicago gynecologists of whom there were a goodly number, to tell of women problems in general and hear of the same in particular. Whereto came DR. BURNELL, from Flint, with forceful words of problems in his plant, and many answers to questions he wanted to be asked of him but which were not. And DR. SHOWALTER, with figures from Western Electric's experience of medical matters among 14,000 women at the company's work. And DR. ALLEN, to urge prevention of later ills by earlier examinations of women employees. Wherefrom there sprang opinions on pelvic examinations, most being of the mind to grant their worth, with many in great wonder of how to arrive at more than the 24 hours appointed for the day, in order that they might come by the time to do them. Also was there much talk of medical department records and the value thereof against the arrival of claims for compensation, some seeing now on the skies of peacetime, elsewise calm and quiet, the little cloud, "no bigger than a man's hand," the which is omen ominous of storm.



Burdick

SOLARIUM SHOWER

"Man spends too much time indoors in heated, stagnant air of rooms and thus suffers from the lack of air and exercise. He is further screened for long periods of time from the shorter rays of sunlight by clothes, window glass, fog."

—Amer. J. Nurs.: 33:739 (Aug.) 1933.

"The ultraviolet irradiation was the only method found to produce any reduction in the number of colds per person, and this showed a substantial decrease."

—The Med. Press & Circular: 202:272, 1939.

"General exposures to ultraviolet rays improve muscular tone."

—Archives of Physical Therapy: 22:199-211 (April) 1941.

". . . during the spring months with their variations of temperature, colds are particularly dangerous, for people are less resistant after the siege of a long winter and the deprivation of ultraviolet rays."

—Can. M.A. Jl.: (May) 1940.

"Another line of research was to compare the morbidity rates among the workers in the Boliden mine before and after the provision of the solarium. Among the 175 underground workers the sickness rate was 9.7 days per head in 1937 and 8.5 in 1938. In the same period there was a reduction by 12 per cent in the frequency of 'one day diseases' and a reduction by 43 per cent of the catarrhal diseases of the respiratory tract."

—Foreign Letters, J.A.M.A. (Oct. 28) 1939.

"It is predicted and believed that with the general use of the (solarium) apparatus lost time because of colds and other respiratory ailments will be reduced at least one-half."

—(Bunker Hill & Sullivan Mining and Concentrating Co., Kellogg, Ida.) All Year Sunshine for Mine Workers.

". . . Ultraviolet . . . reduces both the severity and the number of colds in patients so treated."

—Quoted in Indus. Med. (April) 1943.

The BURDICK CORPORATION
MILTON, WISCONSIN

The Burdick Corporation **Dept. IM2**
Milton, Wisconsin

Gentlemen: I would like to know more about the Burdick Solarium Shower

.....Please have representative get in touch with me.

.....Please send me more information.

Name .....

Company .....City .....

Address .....State .....

Here's Oscar, a valued member of the Willson research staff, who has a prized peculiarity: He can inhale without having to exhale, or vice versa.

Always breathing in one direction, he comes in mighty handy when respirators are to be tested. Put one on him and he'll inhale tainted air as long as his colleagues wish, while they measure and record the respirator's performance.

This is, of course, only one of countless ways by which Willson makes sure that its products will give industrial workers protection against the gases, smoke and fumes they encounter on the job.

All Willson protection is scientifically engineered to yield the utmost in safety and comfort. That is why so many Safety Directors and Purchasing Agents specify Willson for head, eye and lung protective equipment. For 73 years Willson has been a leader in the field of accident prevention.

GOGGLES • RESPIRATORS • GAS MASKS • HELMETS

DOUBLE WILLSON PRODUCTS INCORPORATED
READING, PA., U. S. A. Established 1870

WILLSON #780 APPROVED RESPIRATOR

This respirator is Bureau of Mines-approved for protection against metal fumes, toxic dusts and chromic acid mists. It can be worn comfortably under welding helmets, if necessary.

Group Feeding in Small Plants

—Observations on Why and How—

FELIX J. UNDERWOOD, M.D., *Executive Officer,*
MARY STANSEL, *Nutrition Consultant,*
WAYNE L. RITTER, M.D.,
Division of Industrial Hygiene,
Mississippi State Board of Health,
Jackson, Mississippi

RECENTLY both the lay and medical press have been flooded with articles on nutrition. To these writings have been added the circularized observations of some of the pharmaceutical houses which would seem to suggest that the taking of a tablet containing some vitamins or minerals would fairly adequately answer most nutritional problems.

If the nutrition program, as it relates to industry, were as simple as the management of a specific dietary deficiency, the answers would be readily available. But the problem is more complex. Food for workers must be not only of a highly nutritious quality, but must also be *readily available* in such quantities and at such times as seem best designed for the maximum efficiency of all concerned. To meet these conditions most of the large industrial units in America have begun to assume a direct responsibility for providing food for their employees while they work. The smaller industrial units are now beginning to be faced with the same factors that brought about in-plant feeding programs in the larger units. They must adapt the lessons learned from the larger plants to their own needs.

In the smaller plants, as in the larger ones, the medical department usually will be responsible for at least part of the supervision of this undertaking. The focus of interest of industrial physicians is usually in other directions. We have, therefore, felt justified in presenting the following material relating not only to the most generally effective management policies in this connection, but also to considerations of sound restaurant practice applied to industrial needs. It seems best to discuss certain points and summarize others on which there is general agreement. Since there has already been produced elsewhere an adequate documentation of the nutritional values of various foods, we will stress how, rather than what, to feed.

As with all undertakings, the first consideration should be the objective. Is the program to be designed: (1) exclusively for the glorification of the worker's lunch box; (2) toward supplementing the lunch box with food in the plant, or (3) toward replacing the lunch box by serving a complete and highly nutritious meal in the plant.

Before embarking on any changes in the established customs of a plant, one should consider how the changes will affect production. Unless an increased efficiency can be proved as a result of instituting some new undertaking, its industrial applicability will be short lived. Any opposition of management to supplementary feeding periods or foods that leave hands sticky or soiled must be anticipated and an agreement reached on policy before putting any innovations into practice. Any nutrition program in industry that starts off without thoroughly considering such factors will be doomed.

Educational and Promotional Material

IN INDUSTRY an educational program on nutrition is not enough. Unless some practical application is developed from the ideas contained in promotional material, there is usually a very limited amount of employee interest and cooperation. Every manager

WHEN THEY SAY:

"Doctor...it's like this..."

WHEN THE PAINS OF SIMPLE HEADACHE OR MINOR NEURALGIA slow a worker down, try giving him quick, sure relief with a couple of Anacin. A great back-on-the-job prescription.

QUICKEST SIMPLE ANALGESIC at hand, Anacin offers a skilful combination of effective, medically proven ingredients.

A SPECIAL PRESCRIPTION BOX of 250 envelopes, each containing 2 Anacin tablets, costs only $2.83.

For more about Anacin, write on your letterhead to The Anacin Company, 257 Cornelison Avenue, Jersey City 2, New Jersey.

ANACIN

REG. U. S. PAT. OFF.

AI-4

knows that if a job is to be done properly, he must do it himself. In no place does this cliche apply more pertinently than in the care and feeding of workers. This is not said to disparage an educational approach, but to remind us that it is only an approach, not the full job.

Before the inauguration of any program, and as a continuing supplement to it, effective use *can* be made of posters, pamphlets and other educational material which can be obtained free or at small cost in an almost unlimited variety and amount.* This material, usually directed to the worker and his family, may be used on bulletin boards, in pay envelopes and under other conditions that seem most appropriate for obtaining interest and action. At this level the program in the small plant can be, and usually is, handled by the industrial nurse as one of the educational functions normally expected of her. But no amount of well directed educational material will make up for a lack of food in the stomach.

The Worker's Lunch Box

THIS time-honored custom has several sound and easily discernible roots. First, convenience — no standing in line waiting to purchase food when one is already hungry, and industrial lunch periods are short. Second, economy—the utilization of leftovers from the home larder. And last, but not least, is the psychological proposition that the worker has already given his wife her money for the food budget, and additional money spent for food at the plant comes out of his own pocket where its loss is more immediately and acutely felt.

In some plants, a great majority of the workers have always brought their own lunches. Here, a program designed to glorify the lunch box would seem conducive to obtaining results. Not only is there a wealth of educational material specifically designed toward improving the nutritious quality of meals from this source, but several companies are now marketing clear plastic lunch boxes, the elegance and visible contents of which might be used to stimulate the pride of the worker, and the housewife at home who prepares the food.

Purely from considerations of efficiency and repeated employee requests, as a well run plant grows, its management will ultimately be faced with the necessity of making available in the plant certain supplementary foods to augment and expedite such a program.

The Lunch Room

MOST states have laws prohibiting employees from eating at their work benches if their job exposes them to lead or certain other toxic substances. Unless some space is provided in any plant, with convenient washing facilities, where employees may gather to eat their lunches, much cluttering of the work room area is bound to develop and some staining and shrinkage of material. Even without supplying any food, to get a space set aside where employees can enjoy their lunches is a step in the right direction. The uses of the lunch room need not be limited solely to eating. Most group meetings can be held there. If there is a separate management dining room, this usually serves as an ideal meeting room for plant committees. It may also house a lending library. The main part of the lunch room frequently provides excellent space for recreational purposes or even community entertainments.

*See "Some Sources of Promotional Material and Information" which appears at the end of the article.

The Lunch Hour

THE term is still applied to the time taken by employees for their main mid-shift eating period. It is almost never an hour any more. It is necessary to know its exact length, though, because it is best to adjust any feeding program around conditions as they exist. The length of the lunch hour has undoubtedly been a matter of discussion between management and employees at some previous time. By starting off a feeding program with changes in the time and duration of this previously accepted lunch hour, many otherwise good plans have encountered serious opposition. In the beginning, certainly it would be best to focus on the nutritious quality and quantity of food and the most expeditious method of getting it to the worker. If the program is eminently successful, time will be afforded later for discussions about when and how long the lunch period should be.

If the lunch hour is 15 minutes, the employee must either bring his own lunch or have it *immediately available* to him. If all employees have the same lunch hour, unless most of them bring their lunches, some must inevitably spend much time waiting in line to be fed. This, of course, results in much personal irritation and inefficiency. To combat this, the large plants stagger their lunch hours. This can be avoided usually in small plants by designing the feeding program to eliminate delay. Serve a "Victory Lunch" allowing no substitutions. Supplement this if necessary with previously prepared packaged and bottled goods.

Supplementary Feeding

IF MID-MORNING and mid-afternoon snacks for workers are not already part of the plant program as envisioned by management, this would seem to be one of the first points on which education and pressure might be brought to bear. The industrial importance of supplementary feeding was first documented and stressed by Haggard and Greenberg. In a time study analysis of production jobs, there is found to be a consistent slump in production in the middle of the morning and the middle of the afternoon. Carefully controlled experiments have proved that this slump can be most adequately controlled by the administration of one gram of carbohydrate. In companies where production rates are carefully checked, it has been found that it would be cheaper for management to supply food to the employees at this time than to accept this slump of production against a standard hourly wage. If management is not interested in going so far in cooperating on this phase of the program, they should at least be interested in encouraging their employees to avail themselves of food at these times purely from considerations of the interest of management. Ten minutes is the time usually allocated for these supplementary feedings.

Vending Machines

CERTAINLY one of the most universally encountered and one of the first efforts toward an in-plant feeding program is the vending machine. With these machines, a coin in the slot entitles one to the variety of packaged or bottled goods that the machine was designed to dispense. It is as easy as it is futile to go off the deep end in condemning these machines. They serve a useful purpose or they would not be so commonly found. In developing a program, no evidence of activity should be discouraged; rather the effort should be understood, modified and expanded, where possible.

Why are these machines so frequently used? The answer is sometimes found in the fact that the bottling company that produced the drinks could install the

Sleep?..

WHAT'S THAT?

*Now—a delicate brain job... then another... and another... to the tune of mortar fire... blast... shock! Steady... steady—easy now. "O. K.... clear the table! Next!" Operating... treating... night and day... Two hours sleep in seventy-two!**

• • •

Yet that's just a side glance into a war doctor's life. When does he relax? Seldom, but that's when he's eager for a cheering smoke. Camel his likely choice—the fighting man's favorite**—for mildness, sheer good taste.

Friends, relatives in service? Remember them often—with a carton of Camels—the gift of gifts for service men!

*From actual experiences of U. S. doctors in war.

1st in the Service

**With men in the Army, Navy, Marine Corps, and Coast Guard, the favorite cigarette is Camel. (Based on actual sales records.)

Camel

costlier tobaccos—

New reprint available on cigarette research—Archives of Otolaryngology, March, 1943, pp. 404-410. Camel Cigarettes, Medical Relations Division, One Pershing Square, New York 17, N. Y.

Iodine is

used by many surgeons

who prefer it as a skin dis-

infectant; it is a first-aid

essential with the armed

forces and is an indicated

germicide for home treat-

ment of cuts, scratches

and other minor wounds.

★

IODINE

Foe of Infection

machines in the plant at no direct cost either to the management or to the employees. In this way, there was no need for capital investment (which might need an authorization from the home office). Also the resulting profits could be shared with the vendor. Money accruing from this source has usually been kept in a petty cash fund for welfare or recreational purposes.

There are, however, other very distinct advantages in these vending machines for bottled goods. There is no need for preparation other than that supplied in the vending machine, almost no spoilage, a minimum of cluttering of the working space is produced, and the product can be utilized either by employees whose hands are extremely dirty or by those whose hands are clean and must be kept clean. Vending machines for candy, fruit and nuts are not as frequently found in industry probably because they do not so completely satisfy these conditions.

Since it is difficult to imagine supplying any employee needs as efficiently as can be done by vending machines, and at so little inconvenience and cost, why isn't this the whole answer? From a nutrition standpoint, bottled soft drinks contain almost no vitamins and something less than 80 calories per six-ounce bottle. These machines are frequently limited in their function to dispensing the bottled goods of one particular manufacturer. Many of them cannot be converted to any other use.

For the duration of the war, at least, it would appear unwise to consider increased utilization of vending machines, not only for the limitations already discussed, but because most of the machines are no longer being made for commercial purposes and the present supply will wear out and become exhausted. The supply of goods is rationed for the machines already in operation. If they can't be adapted to a wider selection of material, much of their use will be lost.

From the standpoint of what is best for the employee nutritionally, of course, it is preferable in these machines to substitute either fresh milk or butter milk but, unless such drinks can be supplied regularly and at the same price as the other bottled drinks, the tendency of these drinks to spoil and the increasing difficulties in obtaining them during this period make their increased utilization even more of a problem. Some of the bottle vending machines will take milk bottles, while some of the packaged goods vending machines can also be used for dispensing fruit, fresh or dried, and nuts, salted or unsalted.

In conclusion then, shall we say of vending machines that if they are available, they frequently offer an expeditious beginning of a feeding program in a small plant and have a usage in supplementing the general in-plant feeding program particularly in the more isolated parts of many other plants. It would be wise, where possible, to select machines that can be adapted to more than one kind of bottled drink or more than one kind of packaged goods. Even after the war, rationing will probably continue for a while and food fads have been capricious at all times.

The Canteen

IF THE PLANT is a small one in a downtown area, both the need for and chances of success of a *complete* in-plant feeding service may be very small, because the employees would have the opportunity of selecting any of a number of outside eating sources where their selection could be individually conditioned by esthetic needs and financial budget. The small plant where most of the employees live in the neighborhood and eat at home could also reasonably expect to put off this added responsibility. However, as the plant

When economy is in question, consider the formula of Unicap* Vitamins. They are within reach.

ONE SINGLE UNICAP DAILY PROVIDES:

Vitamin A	*5,000 U. S. P. units*
Vitamin D	*500 U. S. P. units*
Ascorbic Acid (Vitamin C)	*37.5 mg.*
Thiamine Hydrochloride (Vitamin B_1)	*1.5 mg.*
Riboflavin (Vitamin B_2, G)	*2.0 mg.*
Pyridoxine Hydrochloride (Vitamin B_6)	*0.1 mg.*
Calcium Pantothenate	*1.0 mg.*
Nicotinic Acid Amide (Nicotinamide)	*20.0 mg.*

Available in bottles of 24 and 100

Upjohn
KALAMAZOO, MICHIGAN

UNICAP VITAMINS

*Trademark Reg. U. S. Pat. Off.

ANOTHER WAY TO SEE IT THROUGH... BUY WAR BONDS FOR VICTORY

grows and push for production shortens lunch periods and puts on additional shifts, frequently the community facilities are no longer adequate for meeting the employees' needs for sudden service at all hours.

However, with point rationing (which seems more stringent on small families than large) and the inflation of prices getting underway increasingly, all companies with any in-plant feeding services have noticed recently a tremendous increase in the percent of their employees that utilize these facilities. The employer who answers the needs of his employees finds his labor shortages are never so acute as his neighbor's.

Here the canteen seems the most logical first step to develop. So far our analysis has covered the allocation of space where employees could eat the lunches they brought themselves. Then we considered supplementing this by purchases from vending machines. For the first time we are getting our program far enough advanced to consider employing someone. A counter at the end of the lunch room is now being considered, where in addition to the ubiquitous soft drinks, candy and cigarettes, there will be milk, fruit, nuts and sandwiches. One should be prepared to accede to employee requests that they be supplied with hot coffee, doughnuts, cookies and pie realizing that there are, nutritionally, much superior products, but accepting the fact that the educational program has not then gone far enough in conditioning the employees' tastes. In addition to such vending machines as may have been acquired, and counter and shelf space put in by a carpenter, a refrigerator and three-way sink will be needed with the possibility of soon having to add a stove, a dish washing machine, a toaster and a coffee maker.

Food should be available in this canteen during all hours of the operation of the plant. Not only will supplementary foods be available for mid-morning and mid-afternoon snacks, but also regular meals can be supplemented, even replaced in a steadily growing percentage from a food source that is known and one in which the nutritious quality and quantity of the served food can be controlled in a degree that will depend on the management interest behind it.

The selection of the one to be in charge of this unit should never be done casually since so much of the success of this whole undertaking will depend on the ability and adaptability of its manager. If this is true, one should know something of the types of people who have run these services successfully in other industrial units and how and why one arrives at a decision as to whom to choose for a given plant.

Industrial Catering Service

IS THE responsibility for this service to be let out on contract? Most of us by now are acquainted with the names of several of the large industrial caterers. Their services have been responsible for the development of many ingenious applications of sound restaurant practice to industrial needs. They have a wealth of experience in the field and a national organization whose advice can be used to help in guiding the development of the service in any given plant. They also have a reputation to protect. The chief objections to this type of service are the cost and the difficulty of controlling the nutritious quality and quantity of the food. Some vague ideas are current that *any* company could call in one of these caterers to take over the feeding problems in their plant. At the present time, the larger ones who do the best jobs, restrict their operations to plants employing a *minimum* of 800 to 2000 people per shift. The responsibility for the development of a nutrition program in the small industrial unit, therefore, cannot be farmed out to these experienced hands.

Usually at this point, someone hits upon Joe, who used to run a diner down the street, or Tony, who once was a cook in one of the big hotels. Bringing in a person of this type to run the industrial feeding program has probably worked out satisfactorily somewhere or the effort wouldn't be repeated so often by so many people. For every arrangement of this type that works, 50 fail. This type of small 'concessionaire' or other part-time employee is a source of inconvenience or even embarrassment to management. If the undertaking is not of sufficient importance to justify somebody's full time, it is probably best not to start the service at all.

How should one start? The answer to that question is the answer to any other industrial job. When a new department or division is started, the first employee is a foreman who is experienced and skilled in the requirements of the new job.

The Industrial Dietitian

ALMOST all states have a college or university with a School of Home Economics, one of whose functions it is to train future dietitians. Each year some of these home economists do specialized work in institutional feeding or hospital dietetics. It is sometimes possible by contacting such a school to arrange for a detailed survey by one of these students of the possibilities of developing a new or modifying an old feeding program in any plant. In some schools, these field surveys are a part of the required course of study either at the late undergraduate or the graduate level. A survey of this type might not only acquaint management, but also the medical and personnel representatives with new ideas and possibilities not only relating to the nutrition program itself, but also the type of person who could run it. The head of the department in such a school would be apt to be acquainted with the ones who would be most able and available for such jobs.

A well trained girl of this type, with some institutional experience, can usually be employed at a salary of $150 to $200 a month, which is much less than the price paid for management responsibility in other departments and probably no more than the part time "concessionaire" would clear. This field has developed so rapidly in recent years it seems of increasing importance that the plant management select someone to direct their nutrition program who has had an opportunity for recent and intimate contact with all the new ideas. Such an employee could grow with the development of the unit and would be more apt to become integrated with the other plant services and management policies.

The services of such a manager in several companies have been successfully supplemented by the use of employees who were temporarily incapacitated from their normal type of employment in the plant due to injury or during the course of some rehabilitation program. These employees otherwise are kept uselessly at home for weeks or months sometimes drawing their regular benefit while both the plant and individual could profit through the utilization of their time and services. Frequently rehabilitation is expedited by the employee's developing pride and self respect over his ability to begin to do his share on a job again.

Part time employment here, as in other parts of the manufacturing plant, is to be discouraged. Attempting to use employees who work elsewhere in the plant on a part time basis for the preparation or the serving of food has been generally unsuccessful. Not

In Peptic Ulcer... Hyperacidity... Gastritis...

Magmasil

Greater Acid Neutralizing Power

•

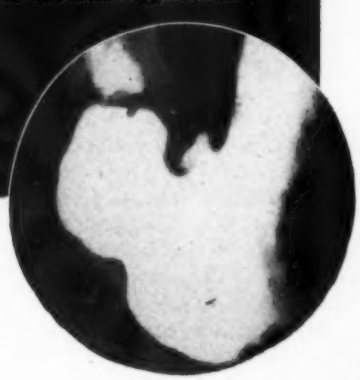
Longer Protective Action

•

Fewer Doses Needed

•

No Constipation



A stable aqueous suspension of hydrated magnesium trisilicate in extremely fine subdivision, Magmasil is an outstanding advancement in the treatment of peptic ulcer, gastritis, hyperchlorhydria.

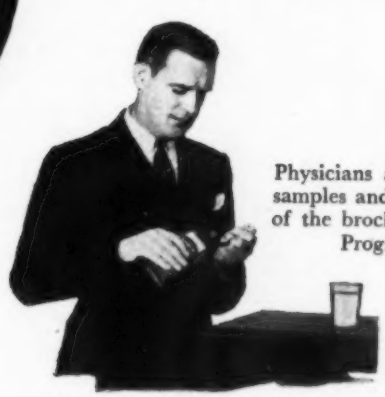
Its antacid action is powerful; one teaspoonful neutralizes 86 cc. of N/10 HCl. It is prolonged, extending over fully four hours.

Hence fewer doses are needed, the customary 11 P.M. administration usually holding the patient comfortable through the night.

Magmasil is free from the drawbacks and limitations of many other antacids. There is no alkalosis, no chloride depletion, no undesirable astringency, no constipation which has made the patient uncooperative with other methods.

Pain and pyrosis are stopped promptly, and healing is brought about rapidly.

THOS. LEEMING & CO., INC., 155 E. 44th St., NEW YORK 17, N. Y.



Physicians are invited to send for samples and a complimentary copy of the brochure "Twenty Years of Progress in Ulcer Therapy."

Magmasil is available through all pharmacies in 12 oz. bottles.

FOR supplying Mercurochrome and other drugs, diagnostic solutions and testing equipment required by the Armed Forces, for developing and producing Sterile Shaker Packages of Crystalline Sulfanilamide especially designed to meet military needs, and for completing deliveries ahead of contract schedule—these are the reasons for the Army-Navy "E" Award to our organization.

The effectiveness of Mercurochrome has been demonstrated by more than twenty years of extensive clinical use.

For the convenience of physicians Mercurochrome is supplied in four forms—Aqueous Solution for the treatment of wounds, Surgical Solution for preoperative skin disinfection, Tablets and Powder from which solutions of any desired concentration may readily be prepared.

Mercurochrome (H. W. & D. Brand of dibrom-oxymercurifluorescein-sodium) is economical because stock solutions may be dispensed quickly and at low cost by the physician or in the dispensary. Stock solutions keep indefinitely. Literature furnished to physicians on request.

HYNSON, WESTCOTT & DUNNING, INC.
BALTIMORE, MARYLAND

only is this type of job lacking in satisfaction to the employee, but her productive efficiency on such a part time food service job never comes up to that of full time employees hired specifically for this purpose. The part time arrangement also gives rise to a notable lack of standardization of the portions served.

The manager of the feeding service should have the right, similar to that of foremen in other departments, of hiring and firing any employee, subject, of course, to the restrictions of the company's personnel policy placed on other foremen. This is an essential factor that is sometimes overlooked and can lead to much unpleasantness and misunderstanding. Owing to the working conditions and the irregularity of hours (and the frequent differential in pay status between these employees and others in the plant), the labor turnover in this division should be expected to be higher than that in other places in the plant.

Policies and Additional Development

THERE are certain additional facts with which those in authority should be acquainted if they are to have any supervision of any further developments of industrial feeding services.

Following a program developed as outlined, first year management might reasonably expect a deficit on capital investment. Since this is a service for employees, it should never expect to operate at a profit, but there is no excuse for its not being able to pay its own expenses after the first year.

A well run feeding service in these times should expect to provide *some* food for at least 60% of the employees. In general, the percent of employees utilizing the feeding service is a fair index of its effectiveness.

Under ordinary circumstances, a restaurant, to be profitable, must have customers for more than one meal.

Fifteen to 20 persons can be served a complete lunch each minute from a short counter. It is considerably more efficient to have two short counters than one long one.

In the interests of economy, complete meals should be served at a set price. Individual selection or substitution for the regular meal (1) increases the time required for serving the individual and slows down the line of those waiting to be served and (2) by increasing the number of choices available, the cost of operation is increased and thus the price of the meal; (3) the substitution usually results in a less nutritional selection of food than was originally planned.

Notices of any changes of policy to be adopted in the cafeteria should be posted in advance on the bulletin boards about the plant. Most people resent changes in which their advice was not considered. The employees are customers of the cafeteria and, therefore, should be given a hearing.

It has frequently been found that an advisory committee on nutrition can be formed in the plant from representatives of the management and the most vocal representatives of the workers. The membership of this committee can be rotated from time to time so that everyone may feel that they have a hand in the management of the feeding program. They can assist in the educational program and act as a grievance committee for problems in the lunch room.

If management is to have a separate dining room with table service, a cover charge or considerably higher prices for their a la carte service should be charged. It is more costly.

A cold lunch can be as nutritionally adequate as a hot one.

Reduce Absenteeism

DUE TO PRIMARY DYSMENORRHEA

The monthly recurrence of dysmenorrhea represents a tremendous loss of working hours, a reduction in efficiency, and a definite strain on the general health of women engaged in industry. Restoration of the patient to a normal physical and mental state requires both relief of pain and control of uterine spasm.

NETHACETIN

Brand of Sympathomimetic Anodyne Tablets

CLINICAL EFFECTIVENESS—Published clinical evidence has shown that Nethacetin provides definite symptomatic relief in 85.3% of cases. Two tablets are given at onset of cramping, followed by one tablet every 2 or 3 hours. Usually, not more than three tablets are needed for each period.

FREEDOM FROM SIDE REACTIONS—Nethamine, the sympathomimetic agent in Nethacetin, acts similarly to ephedrine, but does not have the same pressor or central stimulant action. Thus, reactions such as sleeplessness and nervousness are extremely rare.

FORMULA—Each Nethacetin Tablet contains: ⅔ gr. methylethylamino-phenylpropanol (Nethamine brand) hydrochloride, 3½ grs. acetophenetidin, and 2 grs. acetylsalicylic acid.

Supplied in bottles of 100 and 1000.

Write for Sample and Literature

MERRELL

116th Year

THE WM. S. MERRELL COMPANY · CINCINNATI, U. S. A.

Margarine should be fortified with vitamin A. Table salt should be iodized. White bread and flour should be of the variety enriched by the addition of vitamins and iron.

In restaurants, cost of the raw food is usually determined on a basis of 40 to 50% of the sale price. The labor cost is approximately half the raw food cost. Overhead expenses, usually including fuel, light and power, refrigeration, repairs, laundry and cleaning supplies and depreciation, are approximately half the labor cost or one-fourth the raw food cost.

Payment for the meals should be made on leaving the dining room. Requiring payment at the end of the cafeteria line slows it down. Girls from the front office are usually used as cashiers and, in exchange for their services in the lunch room, are allowed free meals.

For the small plant, it is probably wise to allocate 12 to 15 square feet per person to be served in computing the area necessary for kitchen, dining room space, counters and storage—20% of this space is usually allotted to the kitchen.

Tables four feet square have been found to be the most satisfactory type of seating arrangement by most of the large industrial caterers. This can be expected to increase by 10 to 15% the chair turnover in a lunch room. Trays and table tops made from several varieties of synthetic materials will considerably reduce noise and breakage.

Bake ovens may be used to supplement the top stove cooking space, thus conserving floor area. Steamers and steam jacketed kettles can also be used to reduce the necessary top stove cooking space—they are more economical of fuel and more efficient in cooking certain types of food in quantities.

Periodic checks on the drinking water supply and kitchen sanitation are usually available through the State Board of Health, either from its Division of Industrial Hygiene, Division of Sanitary Engineering or the State Nutrition Consultant.

Summary

VARIOUS reasons have brought industrial management to see the wisdom of providing food for their employees. The national emergency has brought into prominence three factors whose urgency has caused a more rapid and widespread adoption of such programs. They are:

1. Point rationing and shortages of certain foods.
2. The proved necessity of highly nutritious food to insure maximum efficiency.
3. The necessity of having food immediately available for large numbers of people who must be fed frequently and in a very limited amount of time.

To meet these needs in the smaller industrial units a step-by-step plan is presented which could be adapted to the requirements of an in-plant feeding program in any given plant.

1. Provide a clean, cheerful space where employees may eat (this space may also be utilized for group meetings, recreation, etc.)
2. Where convenient, vending machines (selected because of their ability to dispense a wide variety of bottled or packaged goods, fruit or nuts) may be used to supplement the worker's lunch box and to fill the requirements of supplementary feeding periods.
3. Employment of a dietitian or home economist who has specialized in institutional feeding.
4. The establishment first of a canteen at the end of the lunch room which will progressively supplement and ultimately replace the worker's lunch box.

Where the fully developed program is attempted in the beginning many failures result. Like all other industrial services this should grow in response to employee needs and requests; not be foisted upon them only to find scant interest and support.

Sources of Material and Information

American Dietetic Association, 185 N. Wabash Ave., Chicago.
American Institute of Baking, 10 Rockefeller Plaza, New York.
American National Red Cross, Washington, D. C.
Armour & Company, Chicago.
California Fruit Growers Exchange, Educational Dept., Los Angeles.
Children's Bureau, U. S. Department of Labor.
Cornell University, Ithaca, New York.
Council on Foods and Nutrition, American Medical Association.
Evaporated Milk Association, 307 N. Michigan Ave., Chicago.
Florida Citrus Commission, Lakeland, Florida.
General Electric Company, Bridgeport, Connecticut.
General Mills, Chamber of Commerce Bldg., Minneapolis, Minnesota.
H. J. Heinz Co., Research Department, Pittsburgh.
Institute of Life Insurance, 60 East 42nd St., New York.
Lily-Tulip Cup Corporation, 122 E. 42nd St., New York.
Metropolitan Life Ins. Co., Policyholders' Service Bureau, New York.
National Assoc. of Food Chains, 726 Jackson Place, Washington, D. C.
National Assoc. of Manufacturers, 14 W. 49th St., New York.
National Dairy Council, 111 N. Canal St., Chicago.
National Industrial Conference Board, Inc., 247 Park Ave., New York.
National Livestock & Meat Board, 407 S. Dearborn St., Chicago.
National Peanut Council, Inc., 812 Citizens and S. National Bank Building, Atlanta, Georgia.
National Research Council, 2101 Constitution Ave., Washington, D. C.
Nutrition and Food Conservation Branch, Food Distribution Administration, Washington, D. C.
Nutrition in Industry Division, National Nutrition News Service, Food Distribution Administration, Washington, D. C.
Prudential Insurance Company of America, Newark, New Jersey.
Public Health Committee of the Paper Cup & Container Institute, 1790 Broadway, New York.
Quaker Oats, Nutrition Department, Chicago.
Servel, Inc., Evansville, Indiana.
Standard Brands, 595 Madison Ave., New York.
Standard Milling Co., 500 N. Sacramento Blvd., Chicago.
State Health Departments—either their Division of Industrial Hygiene or their Nutrition Consultant.
Swift & Company, Dept. A., Chicago.
Union Label Trades American Federation of Labor, 901 Massachusetts Ave., Washington, D. C.
U. S. Department of Agriculture, Bureau of Home Economics, Washington, D. C.
U. S. Office of Education, Federal Security Agency.
U. S. Public Health Service, Industrial Hygiene Division, Bethesda, Maryland.
War Production Board Labor Press, Office of War Information, Washington, D. C.
Westinghouse Electric & Manufacturing Co., Mansfield, Ohio.

Some Economic Aspects of Postwar Planning

H.W. PRENTIS, JR.
President, Armstrong Cork Company, Lancaster, Pennsylvania

PRIOR to the Civil War, the average American took a keen interest in public affairs. Since then, that situation has sadly changed. We have washed our hands of dirty politics. We have assumed that government would run itself, forgetting that a republic such as ours is the most difficult type of government to operate successfully that man has ever devised. As a result, our sins of omission and those of our fathers and grandfathers, are now being visited upon us for our negligence and apathy. Our first duty is to help win the war, but unless you and I and millions like us resolve from this time forward to set aside a certain segment of our time and energy to devote to governmental matters, the end of the American system, as we have known it for the past 160 years, is not very far distant. The fact that you are here tonight; the fact that postwar planning meetings like this are being held all over the country; the fact that more books and articles regarding the American system are now appearing than for many a day heretofore, indicates that our thinking citizenry is finally coming alive to the seriousness of the situation that confronts us—a civic awakening that is long overdue. Hitler may yet be considered the saviour of the American Republic, because it has taken a world crisis which he precipitated, to arouse thousands of complacent men and

Presented at the Industrial Planning Conference and 128th Annual Meeting of the Manufacturers Association of Connecticut, Bridgeport, November 9; published in *Connecticut Industry*, December, 1943.

THE ADDED ADVANTAGES OF FOILLE

IN BURN MANAGEMENT

Consistent with the current trend in burn therapy, Foille provides an oily, vegetable emulsion of similar *physical* character to petrolatum or boric acid gauze dressings.

However, Foille offers these *further* advantages: It is augmented by certain chemical constituents which.

(1) Quickly control pain

(2) Consistently control sepsis

(3) Encourage rapid healing

An ever-growing bibliography* testifies to the increasing recognition of the superior value of Foille in thermal, electrical, chemical and other types of industrial burn.

2-oz., 4-oz, pints, quarts, gallons, 5-gallons.

***REFERENCES:**

1. Terrell, T. C.: Comparative study of Foille with tannic acid preparations in the treatment of burns, Texas St. J. Med., 34:409, 1938.

2. Noland, L. and Wilson, C. H.: More recent ideas in the treatment of burns, J. M. A. Ala., 10:157, 1940.

3. Galt, S.: The use of Foille in the treatment of burns, Dallas M. J., 25:81, 1939.

4. Hamilton, J. E.: Modern burn treatment with special reference to a new dressing, "Foille," Indus. Med., 10:427, 1941.

5. Hamilton, J. E.: A comparative study of local burn treatments, Amer. J. Surg., 58:350, 1942.

6. Jonas, A. D.: Creosote Burns, J. Indus. Hyg. & Tox., Vol. 25 (Nov.) 1943.

7. Jarzynka, F. J.: Magnesium in Industry, Indus. Med., 12:427-431, (July) 1943.

CARBISULPHOIL COMPANY

3118 SWISS AVENUE, DALLAS, TEXAS, U. S. A. • CHICAGO, NEW YORK, LOS ANGELES, BIRMINGHAM

To simplify your treatment of

INDUSTRIAL ECZEMAS

Nason's

INDIVIDUAL TREATMENT KIT

for Eczema Therapy

The new SUPERTAH Kit is designed to make it easy for the busy Industrial Physician to dispense or prescribe this White, Non-Staining coal tar ointment in treating the eczematous dermatoses encountered among war plant workers. Each Kit contains a 4-oz. bottle of LOTOKAL (Nason's Calamine Lotion) for bathing affected areas, a 2-oz. jar of SUPERTAH Ointment (either 5% or 10% strength as ordered) and complete but easy-to-follow directions. Your patient thus always has at hand the complete treatment and can easily follow your instructions. This convenience, plus SUPERTAH'S ease of application and freedom from the disagreeable qualities of crude black coal tar preparations, help to secure the patient's cooperation with minimum supervision.

SUPERTAH Ointment (Nason's) has Many Obvious Advantages

SUPERTAH (Nason's) is a white, creamy ointment prepared from a concentrate of crude coal tar, uniformly milled in proportions to equal either a five (5) or ten (10) percent crude tar ointment with these advantages:

1. SUPERTAH does not stain linen or clothing,
2. It will not stain the skin or produce pustulation,
3. It need not be removed before each application,
4. SUPERTAH is fully effective without the unpleasant odor and repulsive appearance of black coal tar.

TAILBY-NASON COMPANY, *Kendall Sq. Station,* **Boston 42, Mass.**

Please send me without charge one sample Individual Treatment Kit.

Name..... ☐ M.D. ☐ R.N.

Street.....

City..... *State*.....

Company.....

IM244

women who cannot fight on the battle fronts, to rise to the defense of the principles of our republic here at home.

Patrick Henry said that the only way to judge the future is by the past. Hence, whatever happens to us as a nation in the postwar period will, in all likelihood, reflect the latent spirit that has revealed itself throughout our brief national history. What then characterizes that national spirit? The noted British philosopher, Arnold J. Toynbee, canvassing the growth and decline of past civilizations in his monumental work on "The Study of History," provides the answer, it seems to me, when he concludes that those peoples who have had to meet a challenge great enough to require the maximum of ingenuity and effort, but not so great as to be overwhelming, and whose response has been equal to the challenge, have thereby lifted themselves to a higher plane of civilization.

Adequate response, moreover, created new challenges which required new exertion of energy and of creative power. Hence successful responses to a succession of challenges are the source and manifestation of the progress of civilization. That process has certainly been characteristic of America. Professor Toynbee not only uses many illustrations from human history but also some analogies from lower levels of life to fortify his thesis. "The molluscs, crustaceans, and certain fishes and reptiles," he quotes from a biologist, "have withdrawn within a heavy protective armour and have given up participating in the free competitive and cooperative life of their environment," while other creatures "have not been inveigled into this passive and timorous mode of life," and hence have made great progress.

History also seems to teach that the sustained creative power of any nation, by which it overcomes the challenges it encounters and moves ever forward, arises from a free and seething diversity rather than from a coerced or passive uniformity. Its progress requires a constant flow of contributions from free cultural units of a free society.

The Challenges of 1900

LET US look back less than one-fourth of the short space during which the United States has been really a nation. What challenges faced the American people in 1900? The country had just passed through several years of severe economic depression, was on the upgrade again, and was looking forward to the improvement in the general well-being that the surge of recent inventions and discoveries might bring. The United States was still primarily an agricultural nation. More than one-half of the people were living on farms or in villages supported by agriculture, and total income realized from agriculture was greater than that from manufacturing.

The telephone had already proved its usefulness, but there were only a million in use, and, while New York and Chicago had been recently connected, long-distance communication was a rather precarious and costly undertaking. The telephone had yet to be made a household necessity and a network of instantaneous communication established around the world. Marconi had discovered the secret of wireless telegraphy in 1896, but the radio industry was still unborn.

Automobile production reached the tremendous total of 4,000 cars in 1900! Four years before, Langley's airplane had flown 3,000 feet, but the Wright Brothers had not yet completed their first glider. The internal combustion engine was still a curiosity. Electricity produced in 1900 was about four billion kilowatt hours, but the industry would soon have to raise production beyond 100 billion of kilowatt hours to meet the nation's need. Only a few hundred thousand homes were then wired for electricity. Could this number be brought up into the millions? And could electrical appliances be made so numerous, so cheap, that they could lighten toil in a majority of homes?

Petroleum had been found useful for illumination and some other purposes, and our production in 1900 was all of 43 million barrels! Its manifold uses and economical means of refining and distributing it had yet to be explored, and its production to be raised in successive decades to well-nigh unbelievable levels.

We were producing less than a million tons of steel a month in 1900. Industrial and other uses would increase

Partial to Complete

RELIEF

from symptoms of

Acute Rhinitis, Allergic Rhinitis, Asthma, Sinusitis

IN ONE DAY

Report of Large New York City Clinic

DATA—51 patients were treated, 15 with acute rhinitis, 16 with allergic rhinitis, 10 with asthma, 10 with sinusitis. Two Nakamo Bell tablets were given each hour four to twelve times the first day according to condition and response. No toxic manifestations were noted.

Percentage of Partial to Complete Relief Obtained by Entire Group.

Rhinorrhea	70%	Sneezing	72%
Nasal blockage	55%	Cough	29%
Edema of nasal mucosa	13%	Lacrimation	56%
Hyperemia of nasal mucosa	10%	Wheezing	21%
		Sore throat	35%
Headache	47%	Pain in sinus area	25%
Malaise	63%		

NAKAMO BELL is a simple 6 gr. tablet of $NaCl$, NH_4Cl, KCl—nothing else.

SEND FOR SAMPLE

HOLLINGS-SMITH CO. IM 2-44
Orangeburg, N. Y.

Sample Nakamo Bell, please.

Name_____ M.D.

Address_____

the demand more than seven-fold. Aluminum production, inconsequential in 1900—only 35 million pounds annually 10 years later—would have to be stepped up to a billion, even two billion pounds a year, as light metals became more indispensable.

Chemical laboratories were working on synthetic fibers. In that vast field industrial pioneering had hardly started. And the marvellous development of plastics, though presaged in a few small beginnings, was a job for the future. Bakelite did not appear for 10 years. There were on the horizon wonderful frontiers to explore and occupy; but who could have predicted what the next 40 years would disclose?

America's Challenge

THESE are but a few illustrations of the challenge that confronted American industry at the turn of the century. It was one phase of the over-all challenge to the American people in general. They were challenged by the activity of creative minds in science and in industry, not to rest content with their notable achievements since the Civil War—with a scale of living higher than that of their ancestors or that of any contemporary people. The choice confronting them was either to stabilize their economic and social life at the level reached, with whatever security they could arrange at that plane, or to venture boldly onward where a free science, a free economy, and a free creative spirit would carve out an uncharted future. They chose adventure. That was also the dominant spirit in industry. That spirit—though crippled—is not yet dead. Given a great revival of dynamic faith by affirmative government action, it will face and surmount, I am confident, the stupendous problems that peace will bring to the American people.

American industry, with the challenge of opportunity, with the incentives provided by a free society, with the drive of competition, proceeded from 1900 on to build America into the greatest industrial nation the world has ever known. Before the outbreak of the present World War our national income was greater than that of the United Kingdom, France and Germany combined, in spite of their much greater population; it was greater even when adjusted by cost-of-living indexes for the respective countries concerned.

The total physical production of manufactured goods had been nearly tripled in the 40 years between 1899 and 1939—without the vast increase due to the production of war materials since 1939 being included in the picture. In 1899 American industry was using 2.1 horsepower of mechanical aid for each worker; in 1939 it provided 6.5 horsepower for each worker. Any comparison of the purchasing power of industrial workers and that of other wage earning groups—with the purchasing power of the corresponding group in other industrial countries—reveals that even in 1938, before we had emerged entirely from a long depression, the prodigious productivity of an industrialized America was spreading its benefits widely among all strata of its population. The capitalist system, whatever its excesses and shortcomings, was producing a degree of well-being for the American people that was not matched anywhere else; and the dynamic of the system was rooted deep in the nature and habits of the American of every stock.

Industry's Recent Record

WE HAD nearly a decade in the 1930's, it is true, during which the economic advance of the nation was slowed down. For the first time in our national history we suffered from 10 years of chronic unemployment. All freedom of economic initiative came under public suspicion and legislative and administrative restrictions. But repression could not end depression. It took a terrible menace from without our national borders to do that. We had built up unappreciated material and human resources during the period of free growth that preceded stagnation—productive organizations, capital assets, and especially the "know-how" of managerial and engineering skill. Best of all we had acquired the habit of meeting challenges. All these resources were brought to bear on the nation's need. The spectacular results are too obvious to justify any attempt at recital. Tremendous difficulties had to be faced. Conversion from civilian to war production required new plant construction, extensive alteration, new equipment, vast readjustments. Management and labor had to learn new skills. Government regulations inherited from a time of business contraction were still in force. Labor relations had not improved under artificially stimulated unionization. Yet American industry has made, during the past three years, a record of achievement unparalleled in history—performing both miracles of preparation and miracles of production. If ever freedom of competitive enterprise was justified by its works, it has been so justified in the display of stupendous economic strength now being exhibited by a free people.

Postwar Challenge

WHAT American industry has done to meet wartime needs, it can—given the opportunity—do to meet the peacetime needs of the American people. It is preparing already to respond to the postwar challenge—a challenge for both production and distribution on a scale far greater than that of the pre-war period.

What is that challenge? Briefly and simply, it is to provide jobs for at least eight million more people when the war ends than the 46,000,000 persons who were gainfully employed in 1940. How can it be met? Through private effort? Through government? The vast majority of our people prefer the first solution. For to provide employment from private sources is in accordance with American traditions. Compared with government intervention, moreover, private employment would be far less costly. Its success would mean a lower tax load. It would mean a higher living standard as the result of the exercise of individual initiative and lively competition, as against the cumbrous procedures of leaden-footed bureaucracy. Under it, we could—if we would—preserve our political, intellectual and spiritual freedom. For history shows that whenever men have endeavored to transfer their personal economic problems to the shoulders of other men calling themselves government, they have eventually reared a Frankenstein monster that has turned and devoured their liberties. The life cycle of nation after nation in the past has been: tyranny, spiritual faith, courage, freedom, economic well-being, selfishness, complacency, apathy, fear, dependency and then back to tyranny once more. As Buckle puts it in his noted work, "The History of Civilization": "The great enemy of the progress of mankind . . . is the protective instinct, . . . the notion, that society cannot prosper unless the affairs of life are watched over and protected at nearly every turn by the state."

Freedom's Price

MEN WHO have experienced the horrors of political, intellectual and spiritual tyranny, acknowledge that even the suffering endured in periodic economic depressions is a relatively cheap price to pay for freedom—if pay it we must. The postwar crisis, however, will soon be upon us and it is too late, I fear, to make our people generally grasp the bitter truth of Somerset Maugham's statement: "If a nation values anything more than freedom, it will lose its freedom, and the irony of it is that if it is comfort or money that it values more, it will lose that too." Today we seem to want so-called security more than freedom. Hence the prospect that we face in America is the loss of our freedom through outright government planning and control of our economy unless we Americans acting, first, in our own enterprises and communities, and second, as citizens of the republic, successfully respond to the challenge of furnishing jobs to some eight million more men and women when peace comes, than were at work in 1940.

"Full Employment"

YOU MAY have noticed that I have not used the phrase "full employment." If full employment signifies providing a factory job for every housewife, who, for patriotic reasons or otherwise, has gone into munitions production work, or for every garage man or barber now making a dollar an hour in an aviation plant, I do not think it can be done by either private effort or the government itself—for very long. But if full employment means a job at a fair

ESTINYL

An Announcement

After six years of extensive laboratory and clinical research, ESTINYL Tablets are now available for the treatment of various estrogen deficiency states.

ESTINYL is a derivative of the natural follicular hormone, alpha-estradiol. Chemically, it is *17 ethinyl estradiol*, and is the most potent oral estrogen known.

Being related to alpha-estradiol, it imparts a feeling of general well-being common to all natural estrogens; and administered in therapeutic doses, undesirable side reactions are uncommon.

Rapid and physiologic relief of menopausal symptoms may be obtained safely and economically by administering two or three 0.05 mg. ESTINYL Tablets daily for one or two weeks. Therapeutic effects may frequently be maintained thereafter with one tablet daily, or every other day.

Available as ESTINYL Tablets of 0.05 mg. and 0.02 mg.: bottles of 30, 60 and 250.

LITERATURE ON REQUEST

SCHERING CORPORATION BLOOMFIELD • NEW JERSEY

GUARD the EYE, the NOSE and THROAT with

COLSARGEN*

The isotonic colloid of metallic silver

Use Colsargen:

In the eye—after removal of foreign bodies or after exposure to irritating dusts because of its soothing, cleansing antiseptic action.

In the nose and throat—for prophylaxis and treatment of infections (coryza, rhinitis, laryngitis, and pharyngitis) because of its isotonicity, nonirritation, and non-interference with ciliary activity.

COLSARGEN is an aqueous liquid—ready for immediate use wherever silver therapy is indicated. COLSARGEN is safer too—lessens risk of argyria.

COLSARGEN Available for Rx use in 1 oz., 4 oz., and 16 oz. bottles.

Sample and Literature to physicians on request.

*Trade-mark Reg. U. S. Pat. Off.

CROOKES LABORATORIES, INC.
305 EAST 45th STREET • NEW YORK 17, N. Y.

In Burning, Itching Dermatoses. Pruritus Ani . . ,

GADOMENT . . .

This Original American Cod Liver Oil Ointment, which has proved its therapeutic efficacy in burns, wounds, abrasions and injuries, is now widely prescribed for industrial dermatitis and pruritus.

Gadoment stimulates granulation and promotes epithelial growth.

In *pruritus ani* the itching, burning discomfort is quickly relieved by Gadoment. For rectal and vaginal application, Gadoment is supplied in small gelatin applicators called Gadolets. Simple to use—slit the end and apply the soothing, cooling, healing ointment to the affected area.

Send for treatise: "Cod Liver Oil Therapy."

THE E. L. PATCH COMPANY
BOSTON, MASS.

wage for an honest day's work at some peacetime task that makes its full contribution to the welfare of the whole economic body politic—for every able-bodied man and woman who is willing to work—then I say that private effort can and must meet that demand if our republic is to survive. The alternative is that our freedom will go by default to the national socialists in our midst who confidently assert that by compulsory economic planning under state control we can have full employment and keep our freedom too. They point to what has happened to employment under our stupendous national expenditures for armaments and say glibly: "If we can keep everybody at work by huge government expenditures for war purposes, we can certainly do the same thing in time of peace. All we need to do is to spend enough money—forgetting the public debt, since we owe it to ourselves—and keep the people working." They completely ignore the difference between production for war and production for peace.

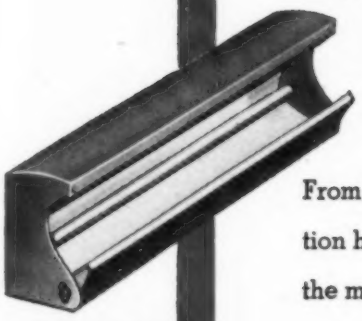
A tremendous demand for glass could be created tomorrow by supplying Bridgeport boys with plenty of rocks and having them break every window in the city. But no one would countenance such procedure, even though it did provide a lot of jobs for glass workers. Yet that, in a sense, is what the waste of war does. Furthermore, there is no problem of creating demand or effecting equitable distribution in respect to war products. We give our shells away freely to Japs and Germans alike! All we have to do is to get one in our gun-sights and the process of distribution starts automatically! But what would be a just formula by which a free people could give away glass, for example, to its citizens? It could certainly not be done fairly by creed or race or color. By charity? Yes, now and then when a tornado breaks the windows of every house in some village in the middle west. Well, some one might say, why not build more houses? That would require more glass. Yes, but who is to get the houses? How can they be given away equitably among our citizens? So far we have found only one practical way to proceed and that is to distribute to each man, in glass, or houses or anything else he wants, the equivalent of what he puts into the nation's economic pot through his own effort; not what that mystical thing, the state (meaning you and me and all the rest of us) puts in, but what each individual himself contributes to the common pot of goods and services.

Government Expenditures Not the Answer

WAR PRODUCTS are not made to serve economic needs. No matter how good looking a machine gun, a tank or a bazooka may be, no man is likely to want to exchange his personal goods or services for it. To produce them we are taxed, or for patriotic reasons lend money to the government to purchase such goods so as to protect our national freedom. Such loans, after all, are only a form of deferred taxes because they can be paid off only by taxes levied either on us or on future generations. So can you imagine an intelligent *free* people continuing to give up in loans or taxes, enormous sums in times of peace for the production and distribution of vast quantities of goods to be distributed solely in accordance with the whim or self-interest of bureaucratic politicians? No logical parallel, it seems to me, can be drawn between stupendous government expenditures for munitions to be destroyed in the cauldron of war for national defense, and huge outlays for peacetime goods for subsidized distribution to its own citizens. The challenge of finding jobs for eight million more Americans in the postwar period must be solved in some other fashion than by vast government expenditures, if we are to preserve our freedom. In fact Lenin, the Communist, said years ago that the surest way to destroy our type of representative democracy would be to lead our people to believe that public authority can permanently supply them with either jobs or the means of livelihood, for in that event, he declared, the people's demands would become so insatiable that no free government could possibly withstand them. Deficits would rapidly pile up, financial chaos would ensue and eventually the government itself would be destroyed.

No, if eight million more jobs are to be provided in a *free* postwar America, those jobs can be supplied in only

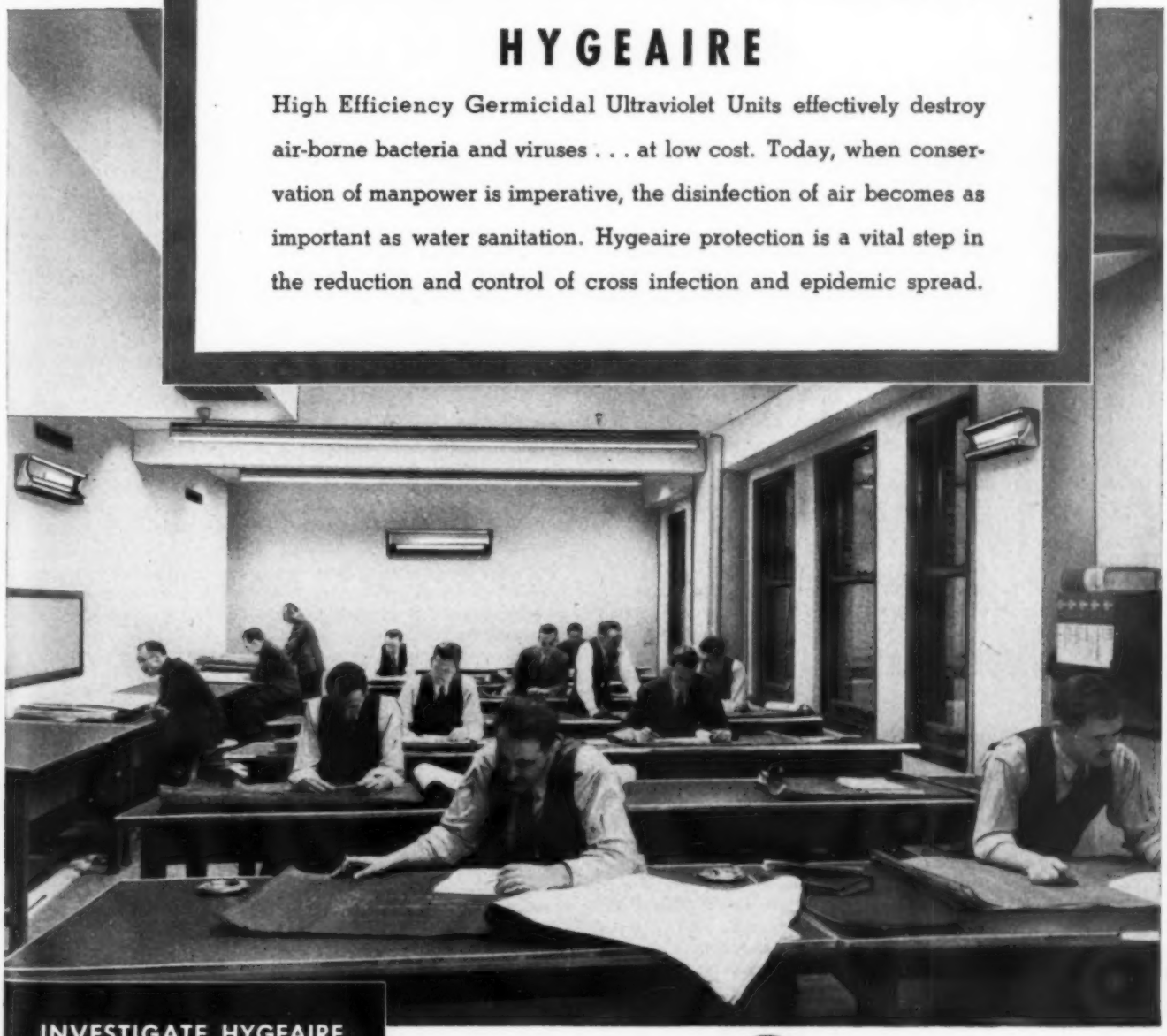
COMBAT AIR-BORNE INFECTIOUS GERMS . . . maintain production schedules



From the desk or work bench of an infected employee, thermal circulation has been shown to convey bacteria of communicable diseases to the most remote areas of an office or factory . . . with amazing rapidity.

HYGEAIRE

High Efficiency Germicidal Ultraviolet Units effectively destroy air-borne bacteria and viruses . . . at low cost. Today, when conservation of manpower is imperative, the disinfection of air becomes as important as water sanitation. Hygeaire protection is a vital step in the reduction and control of cross infection and epidemic spread.



INVESTIGATE HYGEAIRE PROTECTION TODAY

- Ask your medical director to consult his hospital supply dealer or write us direct.

AMERICAN STERILIZER COMPANY

ERIE, PENNSYLVANIA

one way, which works out like this: Some enterpriser decides to start, say a manufacturing business. He invests capital in plant, equipment and raw materials. He gives a few workmen jobs. People buy his product and he makes a profit. He then invests some of this profit in his plant so as to improve his product and his method of making it. More people buy the product. The enterpriser has more jobs to offer in his factory. The process goes on. He invests more capital in more and better machines to get volume-production. This enables him to lower his selling price. More and more people buy, and more and more jobs are created.

The Declining Business Birthrate

A SIMPLE enough procedure, but that is the actual process that has created the gainful jobs that tens of millions of people in America enjoy today. But see what has happened in the last few years. Recent Department of Commerce figures reveal that beginning in 1937, the rate of "business births" started to decline and that by the end of 1941 we were actually back to within 30,000 of the number of new enterprises that came into being in the year 1900; and that during 1941 the sharply declining business birthrate curve overtook and dropped below the curve of business mortalities. So that even before Pearl Harbor the country's total "business population" was declining.

The amount of new capital invested, as revealed by sales of new capital issues, is another indication of the trend of the spirit of enterprise—the willingness to take risks in new ventures on which the creation of new jobs depends. The average annual amount of new capital issues in the seven years from 1926 to 1932 inclusive was $3,500,000,000. The average annual amount of new capital issues in the seven years from 1933 to 1939 inclusive was $629,000,000, a decline of 82%. Private construction for the seven years from 1926 to 1932 averaged $6,410,000,000 as against $2,322,000,000 for the seven years, 1933 to 1939 inclusive—a decline of 64%. The cost of the Federal government in the same period rose 92% and national income on an average declined 13%. The decade of 1930 was the first decade since the foundation of our nation in which our scale of living actually declined! Obviously this trend must be reversed in the postwar years, if we are to meet the challenge of providing eight million more jobs.

The Ledger

WHEN peace comes, we shall possess more manufacturing facilities (in many lines), more new materials, more skilled labor, a greater pent-up demand for goods, and larger reservoirs of spending power than we have ever had in our history. On the other side of the ledger, we will probably face a public debt of from $250,000,000,000 to $300,000,000,000; the staggering problem of reconverting our industries to peacetime operations; a steady, but we hope slow, upward spiralling of prices; shortages of working capital in many of our business enterprises; high corporate taxes; unfavorable cost-price ratios in manufacturing and merchandising and a precarious margin of profit; an inventory in the government's hands of probably 60 billion dollars' worth of all sorts of materials, ranging from ships to shoes; the problem of the sudden termination of perhaps 75 billion dollars' worth of government war contracts; the disposition of 15 billion dollars' worth of government-owned factories; not to speak of the question of land that it has acquired during the war —an area approximating that of all the six New England states.

At the end of the war the Federal government will own more than 50% of the country's annual capacity of aluminum; 92% of magnesium capacity; 10% of steel; nearly 100% of synthetic rubber and high octane gasoline; 50% of machine tools and at least 90% of aircraft. "If there ever was a question which must be settled in the national interest," warns Secretary of Commerce Jesse Jones, "it is the future utilization of this vast industrial empire."

War production in 1944 is expected to reach the astronomical figure of $80,000,000,000, or more than half the nation's total industrial output. The construction cost of the Panama Canal was less than $400,000,000, so you can see that during 1944 our production of munitions will be equivalent to the building of more than 200 Panama Canals, or a little better than one canal every two days!

The Reconversion Problem

TO RECONVERT our manufacturing facilities when the war is over will require a substantial period of time in the case of consumers' durable goods. Consumers' goods industries, fortunately, will be in a better position, and able in most instances to start operations just as soon as raw materials are available. Nevertheless the problem of supplying eight million more jobs than existed in 1940 cannot be met promptly and successfully unless there is careful voluntary planning now, starting at the individual business and community level, and working on up to the Federal government, which, obviously, will establish the environment in which all individual postwar plans will have to function. The amount of voluntary private planning now under way is highly reassuring and reflects a rising sense of social responsibility on the part of American business leadership.

Unfortunately, writers of sensational magazine and newspaper articles have seized on this fact to give the public what I believe to be a grossly exaggerated estimate of the immediate postwar possibilities in certain fields, notably prefabricated houses, aviation, plastics and electronics. There will undoubtedly be great advances in all four but when a feature writer, for example, gives the impression that in the years following the war the skies will be darkened by cargo carrying planes and that Detroit and Chicago and other inland cities will be our great ports of entry, displacing the seaports on the Atlantic and Pacific Coasts, there is nothing at present in the aviation picture to justify such giddy flights of the imagination. The airplane industry is obviously destined for remarkable development. The use of airplanes for passenger travel, mail and express, will be vastly increased, but to envision aircraft as a postwar substitute for steamships, railroads and motor trucks, in the transportation of ordinary freight, is to ignore the economic facts of the situation. For example, to transport 100,000 long tons of freight monthly from San Francisco to Australia by steamship would require 44 ships, 3,200 men for their crews and 165,000 barrels of fuel oil. To do the same job by airplane would require 10,022 four-engined transport planes, 120,765 men in the flight crews, 8,996,000 barrels of gasoline and 85 large sized tank ships to carry the gasoline. Hence, although we shall see many wonders of industrial and commercial development in the postwar years, we should guard against fanciful dreams of Aladdin-like advances that will automatically solve our postwar employment problems.

The Danger of Debt

WITH a public debt of from $250,000,000,000 to $300,000,000,000 the nation will be treading on parlous financial ground. Billions of dollars' worth of war bonds now in the hands of the public will be turned in when the war is over and the funds required to cash them will have to be provided by continued heavy taxation and more government loans from our banking institutions. Even now the banks of America own approximately $70,000,000,000 worth of government securities—approximately 40% of all government issues outstanding. The total capital resources of our banks are approximately $8,000,000,000. So one can readily see that a drop of about 10 points in the value of government bonds would bankrupt practically every banking institution in the country. Thus the government must maintain, through purchases of its securities, the market value of its outstanding obligations. As a corollary to this effort, interest rates must be kept low because if interest rates rise, the value of low interest-bearing government securities would tend to fall. Hence, it seems likely that the day when the average individual starting from scratch can accumulate any substantial financial competency for his old age or for his family when he dies, is past. This is a matter of grave moment since it strikes at the very root of the incentive system—that has had so much to do with the economic development of America in years gone by.

Let us take a glance—under present conditions—at the

X-ray Dermatitis, Burns, Trophic Ulcers, Miscellaneous Wounds Respond to

White's Vitamin A and D Ointment

By stimulating granulation and promoting epithelization, the vitamins A and D of fish liver oils as provided in White's Vitamin A and D Ointment have shown their efficacy in a variety of skin lesions.

The therapeutic value of the cod liver oil vitamins is now well known in the topical treatment of wounds and burns, x-ray sequelae, trophic ulcers, crushing and avulsive soft-tissue injuries familiar in industry.

White's Vitamin A and D Ointment provides the A and D vitamins from fish liver oils, in the same ratio as found in cod liver oil, and in a suitable lanolin-petrolatum base. The ointment is free from excessive oiliness, has a pleasant odor and will keep indefinitely at ordinary temperature.

In four convenient sizes: 1.5 oz. tubes, 8 oz. and 16 oz. jars, 5 lb. containers. Ethically promoted—not advertised to the laity. White Laboratories, Inc., Pharmaceutical Manufacturers, Newark 7, N. J.

White's PRESCRIPTION *vitamins*

EFFICIENT, CONVENIENT AND ECONOMICAL . . .

This ILLE PORTABLE UNIT for HYDROMASSAGE

Indications: Indispensable in the treatment of traumatic injuries, stiff joints, sprains, contusions, burns, synovitis, and various infections; also in the aftercare of fractures, and for peripheral vascular disease.

The Ille Improved Whirlpool Bath is equipped with its own electric turbine ejector (with aerator), requiring—not a continuous new supply of constantly flowing hot water—but the minimum necessary for immersion of the affected part. This enables the Bath to deliver any desired degree of hydromassage to arm, leg, hip or lower spine, at minimum installation and operating expense. Suitable for use in office, hospital or at the bedside, and easily moved as desired—providing great flexibility in treatment, for the relief of pain and improvement of function and circulation in a wide variety of conditions . . . materially reducing disability and absenteeism, and the time required for manual massage.

ILLE ELECTRIC CORPORATION

36-08 33rd Street, Long Island City, N. Y.

status of a more or less typical middle class family—husband, wife and two dependent children—with an income of $5,000 a year. Fourteen years ago, in 1929, this family paid a Federal income tax of $3.00 a year and as recently as 1939 was assessed only $58.00. Living comfortably there was enough money to educate the children and perhaps $1200 or $1500 left over for life insurance and other savings. At the end of 25 years such a family could acquire a modest fortune of $30,000 or $35,000 as a bulwark for the parents' old age and as a nest egg for the children when the parents died. Invested at 6% it would yield an income of from $1800 to $2000 which was about 40% of the income that the parents had enjoyed at the peak of the father's earning capacity. Now look at the picture. Federal income taxes in 1943 took $730 out of the fund formerly put aside for savings. If the new rates proposed by Mr. Morgenthau recently were put into effect, the family would have to pay $1,163 in Federal income taxes, which would absorb practically all of the $1200 or $1500 that was formerly saved. What small sums do remain to be invested—even at present tax levels—cannot be safely expected to yield more than 3%, so that these parents who formerly could anticipate a self-respecting, self-supporting old age, have little now to look forward to except to live on a maximum government pension of $85 a month when they reach age 65. To a considerable degree, we can thank the deficit spenders of the '30's for the situation in which such thrifty citizens now find themselves, since it was the deficit spenders who forced down the return on savings during the decade before the war in order that they might go into debt at a low interest rate.

Impact of Taxation

THREE specific instances have come to my attention in the past month illustrating what is happening to personal incentive in America under the impact of heavy progressive taxation. The moving picture stars who have been appearing on our Company's radio program from week to week at high fees are now refusing to come on from Hollywood because they say frankly that after paying their income taxes there is no financial inducement left. A manufacturer who employs 300 men stated frankly that he was at the end of the road so far as plant expansion was concerned; that there was so little left after he got through paying his corporate and personal income taxes that he could see no reason why at his age he should assume additional responsibility to try to enlarge his business.

A laborer in one of our own factories who would have received double time wages for working the seventh consecutive day—about $13.00 for eight hours' work—informed me that he had decided that it was not worth while to work the seventh day because that put him in the next bracket of the withholding tax, which resulted in his having little margin left for his extra effort.

Two of the major planks in the Communist platform as set forth in the Manifesto of Karl Marx were: "(1) A heavy progressive or graduated income tax and (2) abolition of all right of inheritance." As a well-known middle-of-the-road economist, Dr. Sumner H. Slichter, of Harvard University, remarked recently: "The tax history of the United States since 1932 makes sensational reading. One might almost suspect that the laws had been written by a Communist or Fifth Columnist for the purpose of making private enterprise unworkable." It is a significant fact that in the decade of the '20's there was not a pound sterling of net increase in invested capital in industry in Great Britain, due to heavy progressive income and inheritance taxes and the adoption of totalitarian concepts of economic control rather generally by the British public. As Dr. Harvey L. Lutz, Professor of Public Finance at Princeton University, stated a few months ago; "Mass unemployment as a chronic phenomenon has appeared in England, the United States, France and Germany concomitantly with the increasing weight of progressive taxation of incomes and estates."

In 1940, 235,493 persons in the United States reported net incomes of $10,000 or more, amounting in all to $5,332,516,000, upon which they paid Federal income taxes of $1,137,734,000 and state income taxes of $205,979,000,

hit those "MONDAY MORNING DYSPEPSIAS"!

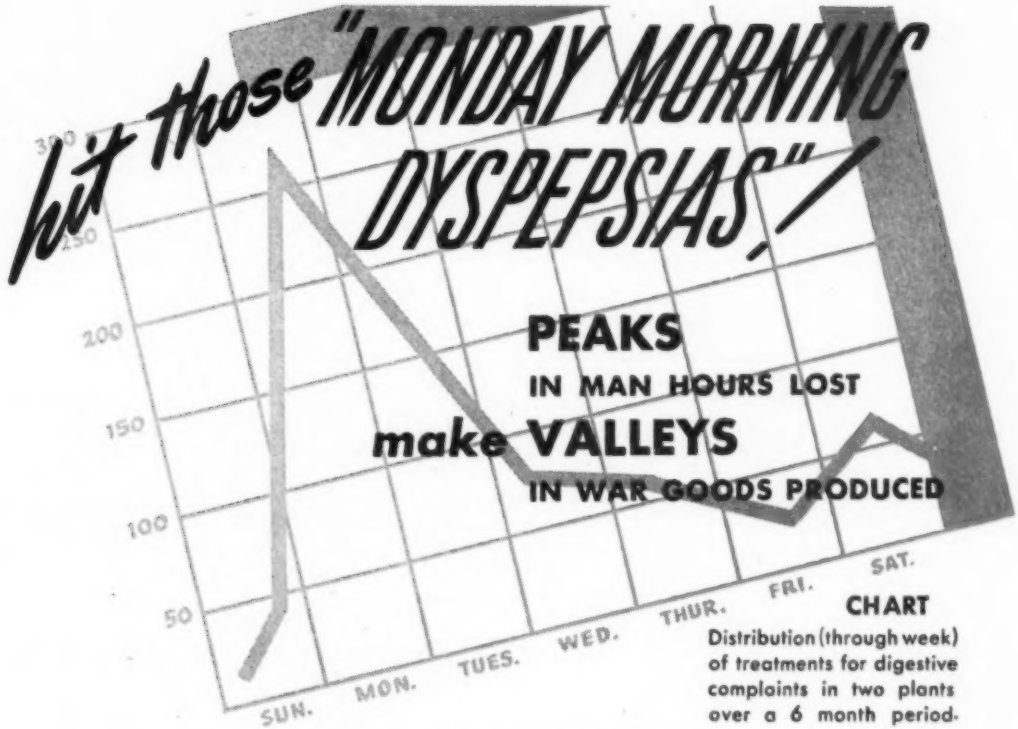


CHART
Distribution (through week) of treatments for digestive complaints in two plants over a 6 month period.

GASTRO-INTESTINAL disturbances loom second as a cause of all absenteeism—and industrial physicians report that complaints from such causes occur with greatest frequency after a week-end or a holiday in which indiscretions in eating or drinking so often feature an attempt at "relaxation."

For prompt symptomatic treatment of functional dyspepsias—as well as nervous and intestinal indigestion, gastritis, etc.—many physicians prescribe Peptenzyme Digestant Tablets, containing pepsin with desiccated pancreas and duodenum—and providing valuable proteolytic and amylolytic enzymes. Peptenzyme Digestant Powder—similar in composition—is available for use in dry prescriptions.

Peptenzyme Digestant Tablets, and Powder, help to keep the civilian army on the job.

SUPPLIED:
As 5-grain tablets in bottles of 25, 100, 500, and 1000 tablets.
Powder: 1 oz.—8 oz. bottles.

DOSAGE:
Two tablets before and after meals, increased if necessary.
Powder: As a digestant — from 10 to 20 grains with each meal.

REED & CARNRICK, JERSEY CITY 6, N. J.
PIONEERS IN ENDOCRINE THERAPY

PEPTENZYME DIGESTANT TABLETS

leaving them $3,988,803,000 net. If this sum had been divided equally among the 135,000,000 men, women and children in the United States, it would have yielded each one increased income of approximately 57 cents per week, most of which would have been quickly spent for consumers' goods and services. Little would have been invested in new job-making business enterprises. What might have gone into insurance or savings would have been placed by the insurance companies or banks, not in the risky securities of new enterprises but instead in the bonds and preferred stocks of established going concerns.

8,000,000 New Jobs

AND YET, the creation of eight million new jobs is the stupendous task that America must achieve in the postwar period. If we are to preserve our freedom, that goal can be attained only in one way, namely, by encouraging thousands of enterprisers to create new businesses and expand those already existing. Under normal conditions a large portion of the savings of the well-to-do flows into new ventures in the hope that it may bring the owners a high return in future years. Much of such capital is always lost, but hope springs eternal in the human breast as long as there is a reasonable chance of reward. That reasonable chance has now been pretty well removed, not only as the temporary result of heavy taxation necessitated by war expenditures, but by a soak-the-rich philosophy which ignores the part that the savings of the well-to-do play in the creation of additional jobs.

Therefore, no matter how much postwar planning may be done by business men and how many communities may determine their postwar demand for goods and their postwar employment possibilities, all such efforts will ultimately fail unless we Americans see to it that our representatives in Congress create the conditions under which the enterprising among us will be encouraged once again to take risks, to run chances with their capital and their health, to build new businesses and create more jobs.

Faith is the foundation of all sound human relations. Confidence in the ultimate intentions of those who are in control of public affairs is essential to the success of a private, competitive business system, such as ours. The enterpriser is willing to risk his money and his time only if he is reasonably sure that the heavy hand of government will not intervene unexpectedly to destroy or take away the fruit of his efforts. Lip service to the private competitive business system by public men who have sought in the past to destroy it, falls on doubting ears. Words, in fact, are not enough. They must be backed now by action. By Joint Resolution, the Congress should promptly proclaim to the people of the United States in unequivocal terms that its primary postwar objective is the withdrawal of government from the control (not regulation) of private business and that all governmental measures will be directed toward the private restoration of our system of private competitive business when the war is over. Only an aroused public, determined to allow nothing to interfere with the creation of millions of additional postwar jobs, will bring about such action.

Then Congress should proceed to implement that declaration as speedily as possible by providing for a sound monetary system based on gold; by putting into effect a real economy program throughout our swollen Federal bureaucracies; by declaring for a balanced budget when the war is over, thus repudiating the theory that Federal deficits are of little or no concern because "we owe the money to ourselves"; by setting up a sound system of taxation which would permit the accumulation of reserves for the postwar reconversion of industry, and which would definitely provide for sharply reduced rates immediately on the cessation of hostilities; by clearly defining the economic areas in which the government proposes to carry on public works in the postwar era; by establishing statutory procedures for the disposition of government-owned factories and inventories, and for the prompt adjustment of cancelled war contracts by the respective contracting agencies; and by setting up definite legal formulas now, under which all wartime production, price, wage and salary controls, will have to be abolished in orderly fashion when peace comes.

Social Legislation

THE ECONOMIC aspects of postwar planning are, of course, necessarily affected by much of the so-called "social legislation" of the past 10 years. Both as an American citizen and as a manufacturer I believe in collective negotiation, provided there is equal responsibility and authority on both sides. I am wholeheartedly against sweat-shop wages and hours. The net result of present legislation on those subjects, however, has been to create on the one hand what might be termed an invisible government that holds in its hands the lives and fortunes of millions of workers, and on the other, to undermine the initiative of the ambitious to whom we must look for leadership in future years. The Wage and Hour Act as it now stands actually makes a law breaker out of me as the president of our company if certain employees earning as much as $250 to $300 a month choose to take work home, or to stay after hours of their own volition to see a job through! They are certainly far from being in the sweat-shop category. It is startling to hear, moreover, from the head of one of the largest industrial enterprises in America, that, under the impact of social legislation enacted with good intentions but with small regard to its ultimate implications, the productive efficiency of the men working in its plants has been reduced from 30 to 40%. Obviously, if we want a higher scale of living in America we must produce more goods and services. For our scale of living depends on the sum total of the output that we have to divide. The less we produce, the less we will have, and laws that go beyond the legitimate objectives of preventing industrial tyranny and oppression, and that strike at the taproots of individual ambition and incentive should be modified. Otherwise the wisest of postwar planning will die a-borning.

It is the bounden duty, therefore, of every patriotic American citizen to confer with his elected representatives in Congress and see to it that they enact those measures that will enable America to enter the postwar period girded and prepared at every point to meet the gravest threat that our free institutions have ever encountered since they were established in 1789. If business is not put in position to meet the challenge of eight million more jobs when the war ends, the "coming slavery of socialism," as Herbert Spencer put it, awaits the nation just around the corner and we shall have fought the war in vain. "Power over a man's support," wrote the authors of the Federalist, "is power over his will." In other words, when government has a monopoly on support, its power becomes absolute. Men who have to depend on the state for their jobs, dare not exercise freely their nominal liberties of speech and thought and conscience, no matter how firmly safeguarded the latter might still remain in theory or on paper.

To meet the challenge of the postwar period, American business for its part must assure the development of new products and the steady advance of our economic frontiers —through vigorous competition. It must show an aggressive spirit of expansion and have the courage to invest in new facilities far larger than in previous peace-time years. It must recognize its social responsibility by passing along promptly the benefits of technological advances by means of higher wages and lower prices.

Ten "Cannots"

THE OTHER DAY there crossed my desk a little unsigned newspaper article—epitomizing 10 points that every good citizen might well keep in mind as he plans the future of the America of his dreams:

1. You cannot bring about prosperity by discouraging thrift.
2. You cannot strengthen the weak by weakening the strong.
3. You cannot help small men by tearing down big men.
4. You cannot help the poor by destroying the rich.
5. You cannot lift the wage-earner by pulling down the wage-payer.
6. You cannot keep out of trouble by spending more than your income.
7. You cannot further the brotherhood of man by inciting class hatred.
8. You cannot establish security on borrowed money.

Increasing the Effectiveness

OF LEUKORRHEA TREATMENT

The combined office and home treatment of Trichomonas vaginalis vaginitis with Floraquin offers a high degree of success.

The daily use of Floraquin tablets by the patient prolongs the effectiveness of your office insufflations with Floraquin powder and enhances the value of the latter.

Each Floraquin tablet and each 20 gr. of Floraquin powder contains 1½ gr. of Diodoquin, a recently developed double iodine compound. Diodoquin is an insoluble and nontoxic trichomonicide, also used effectively in the treatment of amebiasis. Floraquin contains lactose, specially prepared anhydrous dextrose and boric acid, adjusted to such hydrogen ion concentration that, when mixed with the vaginal secretion, it will re-establish the normal vaginal pH of approximately 4.0.

Floraquin Tablets—packages of 24

Floraquin Powder—bottles of 1-oz. and 8-oz.

G·D·SEARLE & CO·

ETHICAL PHARMACEUTICALS SINCE 1888

CHICAGO

New York Kansas City San Francisco

Floraquin is the registered trademark of G. D. Searle & Co.

SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

9. You cannot build character and courage by taking away men's initiative and independence.

10. You cannot help men permanently by doing for them what they could and should do for themselves.

Significantly enough, every one of these 10 points reflects the basic religious concept on which the American Republic was founded, namely, the dignity and worth of every individual soul in the eyes of a Sovereign God.

Carbon Tetrachloride Poisoning

—Epidemic in a Parachute Plant—

W. E. DOYLE, M.D.,
Director, Bureau of Industrial Hygiene, State Department of Health of Kentucky, Louisville, and
CHARLES BAKER, M.D.,
Assistant Health Officer, Fayette County Health Dept., Lexington

THE cooperation of the Fayette County Health Department was requested in an effort to determine the cause of an outbreak of illness resembling an epidemic of "food-poisoning" at a plant situated on the Versailles Pike approximatey half a mile from the City of Lexington, Kentucky. The company manufactures parachutes for the United States government. The institution is housed in a new, modern building of brick masonery construction, liberally supplied with skylights and windows. The building is a one-story rectangular structure, having a front elevation of approximately 120 feet and extending in depth some 300 feet. A pent-house type skylight occupies the central 40 feet of the roof and extends backward over the working quarters of the building for some 270 feet. Administrative offices occupy the front of the building in rooms which extend to a depth of 20 feet into the building. These offices are partitioned off from the remainder of the building, to which entrance is gained through self-closing doors.

The plant provides employment for some 675 workers, all of whom are women employees except for about 25 men who serve as inspectors, guards, and shipping clerks. Work is carried on in two eight-hour shifts; the first shift going on duty at 6:15 A.M. and continuing until 2:45 P.M.; the second shift beginning at 3:00 P.M. and continuing until 11:30 P.M. Approximately 375 persons work in the plant during the first shift, and 300 individuals during the second shift. Operations are discontinued during the period from 11:30 to 6:15 A.M.

Representatives from the Health Department conducted an investigation at 2:00 P.M. Thursday afternoon, December 9, 1943. According to the information given by the nurse on duty, 137 employees had become ill to varying degrees during the preceding 10 days. In each instance the illness appeared to start suddenly and was manifested by abdominal cramping, nausea and vomiting. Many employees were acutely ill and were unable to continue work. In the majority of instances, however, they were able to remain on the job. The illness lasted from two to five days in the average case, although quite a number of workers continued to feel bad even after resuming their regular work. The nurse had been impressed by the uniformity of symptoms in each case of illness. At the time of the investigation, many of the acutely ill employees were at home and could not be interviewed. During the 10-day period employees had become ill throughout the day at irregular intervals rather than in large groups. In this manner, numerous individuals had become ill each day, and eight or 10 persons had become ill during Thursday when the investigation was made.

Peculiarly enough, 135 employees working on the first shift had been ill and only two individuals employed on the second shift had registered complaints of illness. One of these second shift workers "was thought to have a gastric ulcer" and had been given bicarbonate of soda. The other employee from this shift stated that she thought she had "a gastric upset due to eating fresh pork."

At the time of the interview employees working on the first shift were due to go off duty in 45 minutes. An effort was made to question only the employees who had developed an acute illness very recently. Nine of the employees complaining of illness having its onset within the past day or so were then in the plant, but one individual became so sick that she found it necessary to go home before being interviewed. However, eight of the ill employees were interviewed and the findings varied only in very minor respects.

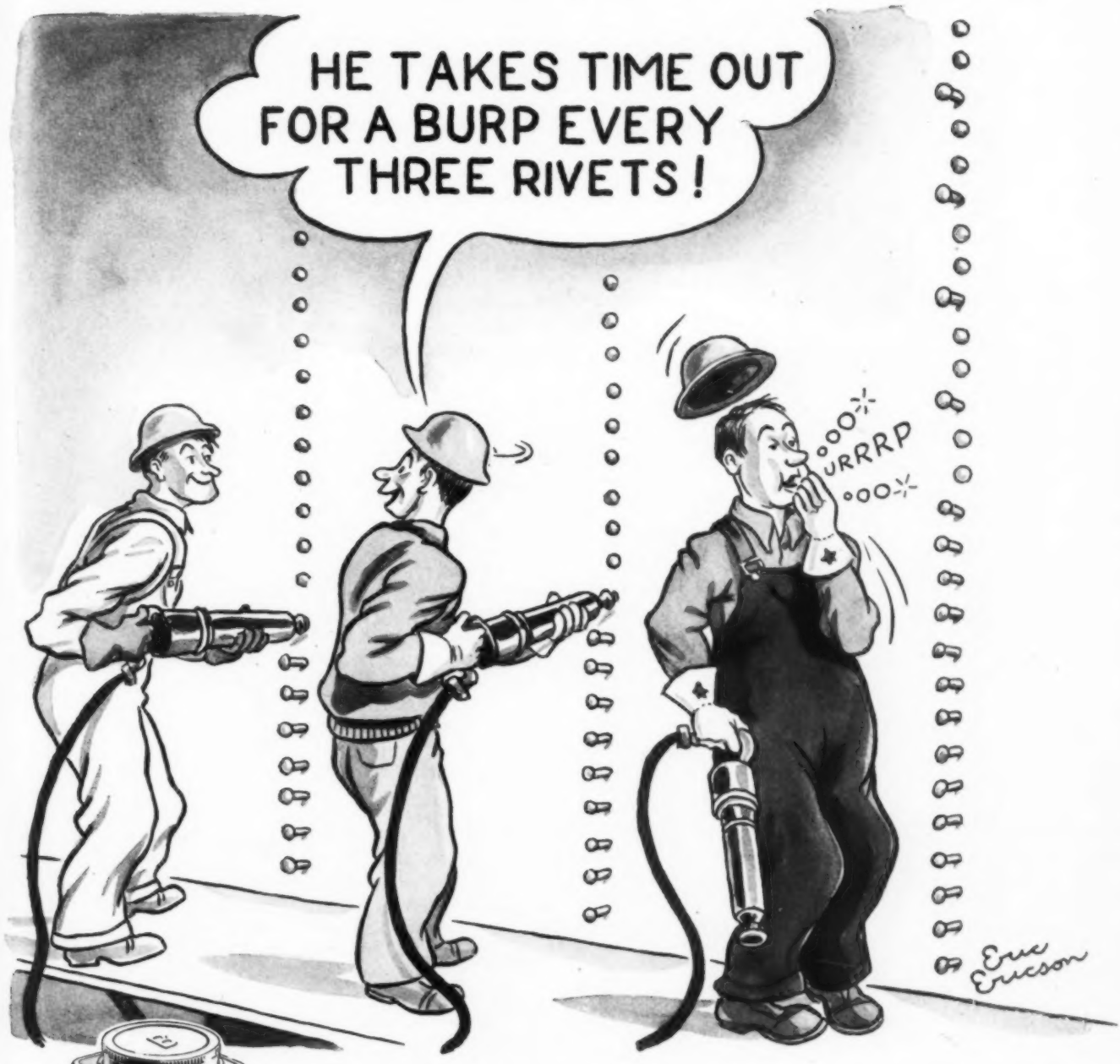
CASE 1: Onset at 10:30 A.M., 12/8/43 with pain across the abdomen, followed by nausea. Retching occurred, but the patient "could not vomit." Nausea and pain were rather severe that evening but the condition had improved somewhat the next day (12/9/43), following a cathartic and an enema. No diarrhea. No food consumed away from home within the past 48 hours except lunches which were prepared at home. No shell-fish, ice cream, salads or canned food eaten within the past 48 hours. Family milk supply purchased from a grade A raw dairy. Meat supplies obtained from a grade A meat market. Chili had been prepared with hamburger the day of onset of illness. A friend and several members of the family had eaten the chili without ill effect. Municipal water supply in the home; occasionally drinks carbonated beverages available at the plant at lunch time. "No idea what could have caused the illness."

CASE 2: Onset, "in the morning" of December 7, 1943, with abdominal cramps and nausea. No diarrhea. Patient has had "gall-bladder trouble" in the past but the present pain "is in a different place" and "acts differently, although the gall-bladder may be back of the trouble." No shell-fish, ice cream, salads or canned food consumed within the past 48 hours. Pasteurized milk in the original containers provides the family milk supply. Municipal water supply. No foods except home prepared lunches. All members of the family have eaten the same foods but none has been ill. "Has no idea what could have been eaten to cause the trouble."

CASE 3: Onset of illness at 5:00 P.M. four days ago. Symptoms consisted of nausea, and severe headache. "Desired to vomit but was unable to do so." No diarrhea. Lunches prepared at home; has been eating fresh, home-killed pork. No foods consumed away from home; did not eat shell-fish, ice cream, salads or canned food within 48 hours prior to onset; "now feeling much better"; pasteurized milk supply and municipal water at home. No one sick at home.

CASE 4: Onset of illness December 6, 1943, with nausea, cold hands and "warm" head. Lunches had consisted of hamburgers and coca-cola from a local restaurant. Pasteurized milk consumed at home. Municipal water supply. No meals other than lunches taken away from home. No shell-fish, ice cream, salads or canned foods consumed within 48 hours prior to onset of illness. Foods purchased at grade A grocery. Has "lost appetite" and doesn't want to eat anything; feeling better, but still rather weak. Has not had diarrhea. Other members of the family are well.

CASE 5: Onset about November 11, 1943, with sour upset stomach and loss of appetite. Headache every afternoon. During the afternoon of December 8, 1943, began to have abdominal cramps, nausea and headache. No diarrhea but "felt bloated." Likes a lot of fresh air and feels "that workroom is not well ventilated." Patient now feels better. No other members of the family have been ill. Pasteurized milk and municipal water supply. Brings home prepared lunches and has consumed no food away from home. No shell-fish, ice cream, salads, or canned food consumed within 48 hours prior to onset, "so far as can be recalled."



16-OZ. HOSPITAL SIZE

BiSoDoL

REG. U. S. PAT. OFF.

POWDER • MINTS

THE BiSoDoL COMPANY
NEW HAVEN, CONN.

PRESSURE OF WORK and improper diet often contribute to so-called nervous indigestion and upset stomach due to hyperacidity. In turn, these gastric upsets lead to lowered efficiency on the job, or absenteeism.

BiSoDoL is an effective, pleasant-to-take antacid alkalizer. Industrial physicians find that BiSoDoL helps bring prompt relief in most cases of stomach distress due to excess gastric acid. Send coupon for generous trial size of BiSoDoL powder.

Special Offer to Industrial Physicians

The BiSoDoL Company, New Haven, Conn.
Please send me FREE a trial size of BiSoDoL powder.

NAME_____

COMPANY_____

ADDRESS_____

CASE 6: "Burning in stomach and thick, sour taste in mouth for four or five weeks." Acute onset two days ago, "with cramps in the stomach and nausea." No vomiting or diarrhea. No one sick at home. Home prepared lunches. Does not drink milk. Does not recall having consumed shell-fish, ice cream, salads or canned foods within 48 hours prior to acute onset. Pasteurized milk, municipal water supply. Patient stated that "Carbona" is used to clean soiled material and she "doesn't like the odor."

CASE 7: Has "been weak" and "had cramping of the stomach for a week or longer." Became acutely ill December 8, 1943, with abdominal pain, nausea and vomiting—"vomited 3 times during the morning and twice that night." Had eaten fresh country sausage (pork) the day before onset but it didn't seem to "disagree" with her. No shellfish, ice cream, salads or canned foods consumed within 48 hours prior to acute onset. No diarrhea. Municipal water and pasteurized milk supply at home. No one sick at home. No food consumed away from home except home prepared lunches.

CASE 8: "Sour stomach for past five weeks." Acute onset December 8, 1943, at 8:30 P.M. with nausea, abdominal pain and vomiting. No diarrhea. Had eaten canned tomato soup for lunch the day before onset but had not consumed shell-fish, ice cream, or salads. Pasteurized milk supply, municipal water. No one else ill at home.

A ninth individual left the plant before being interviewed to go to her home in a neighboring town some 20 miles away. This patient complained of nausea, severe abdominal pain and vomiting.

Officials at the plant informed the investigators that out of the 137 cases the complaints were essentially the same except that many individuals complained of "bloating and difficulty in breathing." One sick employee was found to have an elevation of temperature to 101° F, but in all other instances the temperatures had been normal. One man had the usual symptoms and became acutely ill after having taken a "dose of oil." Another male employee had similar symptoms but did not become too ill to continue his work. The nurse stated that no patients had had diarrhea so far as she knew. She further stated that all of the 137 sick employees had had the same complaints to a variable degree, and that many of them were acutely ill. Employees live over wide sections in the City of Lexington, in the County of Fayette, and in adjacent towns and counties within a 20-mile radius of Lexington.

The plant provided quarters for a cafeteria but the management had not been able to secure the necessary restaurant equipment. Workers, however, eat their lunches at tables in the proposed dining room. Nearly all employees eat home prepared lunches but a few eat lunches prepared in local restaurants. During the lunch periods, bottled soft drinks and pasteurized milk in the original containers are available in the plant. The plant water source is the municipal water supply, and drinking water is dispensed by modern, sanitary drinking fountains conveniently located throughout the plant. Questioning revealed what appeared to be a general satisfaction with the employer-employee relationship on the part of the people at this plant.

The possibility of cross-connections in the water supply could largely be discounted to begin with, owing to the fact that plans for all plumbing had been approved and installed under the supervision of a State Health Department plumbing inspector.

Aside from the fact that illness had been confined to employees working the first shift, other interesting features were obtained through questioning and a survey of the day-to-day nursing records of reported illnesses covering a considerable period of time. The nursing records revealed that a great many employees complained of frequent or even constant headaches. Complaints of gastric distress had been especially numerous for several weeks. Only one member of the secretarial force had developed the symptoms common to the other ill employees. This young lady's duties required her to spend a considerable portion of her time inside the manufacturing section. Other young women assigned to the office area in the plant had entirely escaped illness.

Questioning the management and employees failed to reveal any new manufacturing procedures, the use of any different chemicals, or any variation from routine practices over a period of two years. The investigators were informed that all steps in the fabrication of parachutes were carried out in one large room and no group of employees was engaged in work which isolated them from any other workers.

A recapitulation of information available to this point seemed to justify certain tentative conclusions:

1. An outbreak of acute illness has occurred during the past 10 days.
2. Frequently gastric distress, headaches and weakness have preceded the acute onset for several weeks.
3. The incidence of illness precludes hysterial, malingering, menstral disorders, and the seasonal incidence of any common disease.
4. The use of municipal water, bottled drinks, pasteurized milk, and the fact that no foods are prepared or served on the premises tends to eliminate these factors as possible sources of the disease.
5. The preparation of lunches at home by individual workers indicates the absence of any common factor in this matter.
6. Freedom from acute disease among familial contacts of sick employees and in the community at large would contraindicate the presence of a communicable disease.
7. The absence of fever and diarrhea indicate that the disease is not an intestinal disorder of bacilliary origin.
8. The restricted incidence of the disease indicates a cause which is a common experience among the workers on the first shift together with those whose work places them in the same environment.
9. The above considerations seem to incrimate some unusual factor such as a toxic chemical exerting its influence as a result of direct contact or through inhalation.

THE manufacturing area consists of a large rectangular room some 120 feet wide and approximately 280 feet in length. The ceiling is 15 feet in height except for a central portion 40 feet wide, where a penthouse type of skylight extends the entire length of the room some 22 feet above the floor surface. The side walls are well supplied with large windows which extend from near the ceiling downward to within 7 feet of the floor. Windows, hinged to open inward from the bottom, line the sides of the elevated skylight. All windows and doors along the side walls were then closed securely. The room has been calculated to contain a volume of 600,000 cubic feet of air. Heat is provided by steam. Coils located near the ceiling and electric fans force the air downward. Thermostats placed 6 feet from the floor control the temperature in this workroom.

Some 375 employees were engaged in cutting, sewing and cleaning soiled nylon, in making packs and containers and in testing and inspecting materials and finished products. Employees who sew the nylon parts into a pattern were seated at sewing machines in the right foreground occupying roughly one fourth of the entire floor space. To the left, the entire half of the

...Are you protecting Your Skilled Workers' EYES?

Many tool makers . . . die makers . . . master mechanics . . . expert lathe operators and other much-needed skilled workers could be helping the war effort and their former employers right now *if* it hadn't been for eye accidents—which could have easily been avoided.

There is an indisputable moral in this condition for those companies that have not yet lost key workers, even though failing to provide them with goggles: *don't continue to take chances with the law of averages — install an employee-protecting, money-saving goggle program* NOW!

American Optical Company offers you an entire line of comfortable goggles, each scientifically designed to meet specific types of eye hazards. Get in touch with your nearest AO Branch Office . . . or have an AO Safety Representative call.

American Optical
COMPANY
SOUTHBRIDGE, MASSACHUSETTS

floor space in the room is given over to various steps in the fabrication of the parachute proper, together with assembly of various other parts and necessary cleaning, testing and inspection service. In the remaining fourth of the room, to the right, in back, khaki packs and straps are fabricated. Handling nylon on motor driven machines which are necessarily immersed to some extent in oil results in certain unavoidable soiling of the material. It is necessary that oil be removed to prevent fires due to friction and static electricity. This cleansing is achieved in so far as possible through the use of mild soap and water. However, it is necessary that a solvent be used to secure the necessary amount of cleaning.

The investigators noted that nylon was being cleaned by the use of a solvent on tables placed throughout the entire left half of the floor space. Solvent was present in open containers which averaged one container to the table but at times two were present. The solvent is soaked into pads of gauze which are then rubbed against the soiled areas of the nylon. The solvent evaporates rapidly but the nylon is frequently still moist when transported across the aisle for further sewing. Later the nylon bags were again taken back across the aisle for further processing and such cleansing as might be needed. As the process of manufacture continued the parachutes were passed back along the tables on the left side of the room where further cleaning, inspection, etc., preceding final inspection was carried out. The containers of solvent are placed on table-tops where work is carried out, and accidental spilling of the solvent occasionally occurs. Beeswax is used in various steps of the manufacturing of the straps, etc., and must be available in a molten state. Retorts of this wax are heated over electric hot plates in four places within the large room. These hot plates and containers are in hooded ventilator systems. However, the ventilators do not work effectively and acrid fumes spill out, imparting a somewhat disagreeable odor to the air in the room.

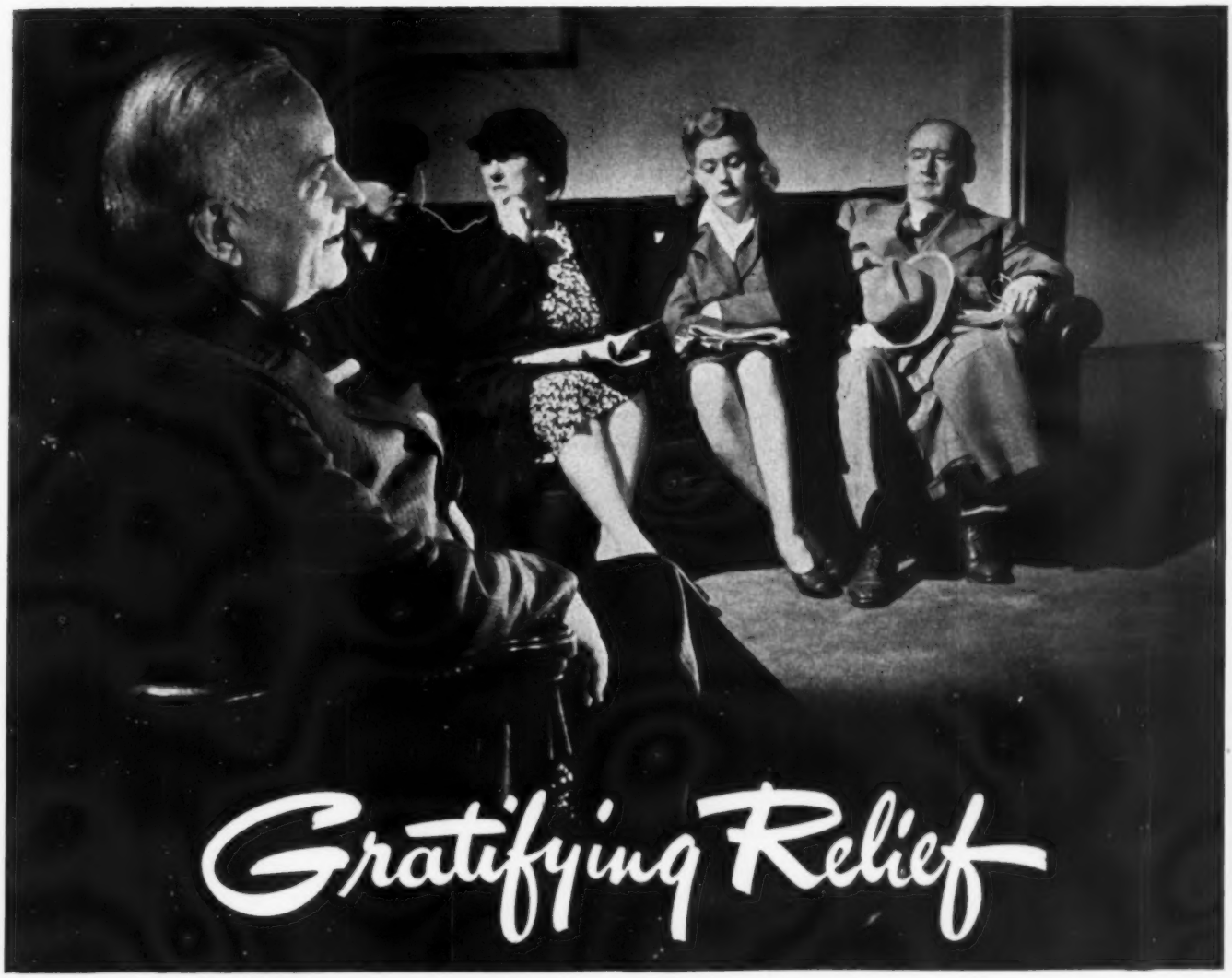
The containers holding the solvent are labeled "Carbona," however these bottles were old Carbona containers which were filled from 50 gallon drums of solvent. The labels on these drums stated that the solvent contained 99.995% carbon tetrachloride. Occasionally this solvent could not be obtained and, in the interval, while awaiting further supplies of solvent, "pure carbon tetrachloride" is used in the place of the usual solvent. It was estimated that at least 4 gallons of this solvent are used daily. This means that 4 gallons of liquid carbon tetrachloride evaporated into the room each 24 hours during week days, or a total of 24 gallons during a six day work week—when operations continue seven days a week 28 gallons of carbon tetrachloride evaporate into the air within the room. An investigator commented that persons operating the sewing machines and working on the tables where the nylon is cleaned are in more intimate and more prolonged contact with concentrated fumes of carbon tetrachloride than other workers and that illness would be expected to have a much greater incidence among such individuals. A check of the records revealed that out of 137 sick employees a total of 135 persons had been engaged in sewing and cleaning the nylon. Two other employees who had been sick had been engaged in work that gave them occasion to go back and forth into the area where the cleaning is carried on. The fumes from the molten beeswax seemed to have little or nothing to do with the incidence of the acute illness, since employees stationed nearest to the retorts but remote from the areas where carbon tetrachloride is used, escaped the prevailing illness.

The present fuel shortage presents the management with somewhat of a problem in their effort to secure sufficient coal supplies to adequately heat such a large building. In an effort to cooperate in a fuel saving program an attempt to prevent unnecessary heat losses was considered to be imperative. Thermostats have been set to provide a uniform, healthful, working temperature. Ventilation is provided by opening a series of windows inward along the penthouse type skylight. Side windows are closed and doors are self-closing. Under most circumstances this type of ventilation, when properly supervised, would probably be satisfactory. However, the fumes of carbon tetrachloride gas have a density of 5.3 times that of air. For this reason, opening ventilators some 18 feet above the floor surface would have but little, if any, effect in dispersing carbon tetrachloride fumes. It is doubtful that the entire mass of carbon tetrachloride gas has been completely evacuated since the onset of cold weather some five or six weeks ago. As the severity of the weather increased the building has been kept more nearly sealed and the concentration of this toxic material has undoubtedly increased. Many ill employees first noted symptoms of gradually increasing severity some four to six weeks ago.

The first shift engages some 75 more workers than the second shift employs. This means that more people are using carbon tetrachloride. Information was available to the effect that more cleaning has been done in recent weeks. It was also stated that more cleaning is done by the first shift than by the second group. A certain percent of parachutes are tested by being dropped from planes. These parachutes are tested during the day and they are carefully cleansed prior to the test. As a result the first shift of workers are further engaged in using the solvent. Thus the greater number of workers engaged in more extensive and intensive cleaning operations are exposed more intimately to the carbon tetrachloride fumes. These factors may well explain the fact that most of the acute illness to date has appeared among workers employed on the first shift.

The employees in this plant and more particularly those on the first shift have a waxy, anemic appearance. The great majority of all employees on both shifts complain of constant headaches, sour stomach, weakness and colds. It is known that individuals susceptibility to carbon tetrachloride poisoning varies to a considerable degree. Individuals who have had previous liver damage from other causes, and kidney disease would react to smaller concentrations of the gas than would the normal person. It is also known that persons addicted to alcohol tolerate carbon tetrachloride very poorly. In this plant certain workers are exposed to the fumes of carbon tetrachloride in considerable concentration throughout the working day. Other individuals are exposed to the same chemical in lesser amounts during the same period. All persons working in the plant are exposed to the gas to some degree throughout the work period. It is very probable that aside from individuals who have acute toxic reactions all employees have chronic tetrachloride poisoning to a variable degree. It is further likely that, should this situation continue to exist the incidence of acute illness and chronic disability will increase materially. It has been indicated that the plant has experienced some difficulty because workers have not turned out their accustomed volume of work. It is probable and in fact almost certain that when this situation with respect to adequate ventilation is corrected, absenteeism, lowered efficiency and unnecessary spoilage of materials will be definitely reflected throughout the plant.

The water supply in this plant has been checked bac-



of distressing symptoms in

CYSTITIS, PYELONEPHRITIS, PROSTATITIS, URETHRITIS

The prompt symptomatic relief provided by Pyridium is extremely gratifying to the patient suffering with distressing urinary symptoms such as painful, urgent, and frequent urination, tenesmus, and irritation of the urogenital mucosa.

Gratifying also is the confidence in the physician and his therapy which is so evident in most patients who have experienced the prompt and effective symptomatic relief provided by Pyridium.

Pyridium is convenient to administer, and may be used safely throughout the course of cystitis, pyelonephritis, prostatitis, and urethritis. *The average oral dose is 2 tablets t.i.d.*

More than a decade of service in urogenital infections

PYRIDIUM

(Phenylazo-alpha-alpha-diamino-pyridine mono-hydrochloride)

Pyridium is the United States Registered Trade-Mark of the Product Manufactured by the Pyridium Corporation

ARMY E NAVY
BACK THE ATTACK WITH WAR BONDS

MERCK & CO., Inc. *Manufacturing Chemists* RAHWAY, N. J.

teriologically. Urine specimens have been examined on a number of employees. Arrangements have been made to determine the calcium content of the blood on individuals who have been sick in the plant recently.

ON FRIDAY morning, December 10, 1943, the management was acquainted with the fact that the investigators believed an epidemic of carbon tetrachloride poisoning existed in the plant. Apparatus for determining the atmospheric content of carbon tetrachloride was not immediately available. In view of the emergency nature of the situation certain recommendations were offered to relieve the condition without waiting for laboratory confirmation of the existence of toxic concentrations of the gas. It was advised that all doors reaching floor level be opened immediately, and later at such intervals as the weather permitted. Attempts were to be made to hold the soiling of nylon to a minimum. All open carbon tetrachloride containers were to be kept covered when not in use. Care was to be used to avoid all unnecessary spilling of the solvent. In so far as possible, nylon was to be cleansed with mild soap and water. Each night during the period from 1:30 P.M. to 6:00 A.M. the building was to be thoroughly aired out regardless of heating problems. Urine and blood specimens were obtained from several employees on Saturday, December 11, 1943. On Thursday, December 16, 1943, apparatus for gas analysis was available, and specimens of air were obtained from several sections of the plant for this purpose.

At the time of taking air specimens, on December 16, 1943, the temporary measures had been in effect for one week. From the day these precautions became effective until that time, one week later, no employee had reported a further instance of illness. Officials at the plant stated that it had been possible largely to prevent soiling of the nylon. It was said that while it had previously been necessary to clean each parachute it was then necessary to clean approximately only one parachute out of every three. The decrease in cleaning was obvious in that the solvent was then only being used on a table here and there. Carbon tetrachloride had been used in some 30 to 40 places originally but on that date only nine bottles could be counted throughout the plant. Such containers as were present were covered when not in use. The air in the plant was much sweeter and more wholesome. Considering the concentration of carbon tetrachloride found in the air at that time one could only hazard a guess as to the amount of the gas present one week earlier when none of the above measures had been taken in the plant.

The laboratory findings on the specimens of urine obtained from 15 employees who were ill or had previously been ill were as follows:

	Albumin	Microscopic
Specimen 1	neg.	neg.
Specimen 2	neg.	neg.
Specimen 3	neg.	neg.
Specimen 4	pos. 4 plus	occ. hyaline cast
Specimen 5	neg.	neg.
Specimen 6	neg.	neg.
Specimen 7	neg.	neg.
Specimen 8	neg.	neg.
Specimen 9	neg.	neg.
Specimen 10	neg.	neg.
Specimen 11	neg.	neg.
Specimen 12	neg.	neg.
Specimen 13	neg.	neg.
Specimen 14	neg.	neg.
Specimen 15	neg.	neg.

The calcium content of blood serum obtained from 16 employees who were ill or had previously been ill was as follows:

Serum Calcium:	December 15, 1943
Specimen 1	8.70 mgm per 100 cc. serum
Specimen 2	8.40 mgm per 100 cc. serum
Specimen 3	10.70 mgm per 100 cc. serum
Specimen 4	9.30 mgm per 100 cc. serum
Specimen 5	10.40 mgm per 100 cc. serum
Specimen 6	9.00 mgm per 100 cc. serum
Specimen 7	9.00 mgm per 100 cc. serum
Specimen 8	8.15 mgm per 100 cc. serum
Specimen 9	11.35 mgm per 100 cc. serum
Specimen 10	7.35 mgm per 100 cc. serum
Specimen 11	10.70 mgm per 100 cc. serum
Specimen 12	7.90 mgm per 100 cc. serum
Specimen 13	9.85 mgm per 100 cc. serum
Specimen 14	8.15 mgm per 100 cc. serum
Specimen 15	8.70 mgm per 100 cc. serum
Specimen 16	7.60 mgm per 100 cc. serum

The laboratory examination on water specimens obtained from various portions of the plant were as follows:

No. 1. (*Cafeteria*)	Versailles Pike
Lab. No. 624	
Date 12/8/43	
City	
Bacteria per cc. at 37° C——Over 10,000	
Gas produced in Lactose Broth Tube at 37° C	24 hrs.———10 cc. 0 1 cc. 0
B. Coli confirmed in 10 cc.——0; 1 cc.——0	48 hrs.———10 cc. 0 1 cc. 0
Type Water No. 1	
No. 2. *Center Main Room*	Versailles Pike
Lab. No. 625	
Date 12/8/43	
City	
Bacteria per cc. at 37° C——3	
Gas produced in Lactose Broth Tube at 37° C	24 hrs.———10 cc. 0 1 cc. 0
	48 hrs.———10 cc. 0 1 cc. 0
B. Coli confirmed in 10 cc.——0; 1 cc.——0	
Type Water No. 1	
No. 3. *Front Main Room*	Versailles Pike
Lab. No. 626	
Date 12/8/43	
City	
Bacteria per cc. at 37° C.———0	
Gas produced in Lactose Broth Tube at 37° C	24 hrs.———10 cc. 0 1 cc. 0
B. Coli confirmed in 10 cc.——0; 1 cc.——0	48 hrs.———10 cc. 0 1 cc. 0
Type Water No. 1	
No. 4. *Rear Main Room*	Versailles Pike
Lab. No. 627	
Date 12/8/43	
City	
Bacteria per cc. at 37° C.——1	
Gas produced in Lactose Broth Tube at 37° C	24 hrs.———10 cc. 0 1 cc. 0
	48 hrs.———10 cc. 0 1 cc. 0
B. Coli confirmed in 10 cc.——0; 1 cc.——0	
Type Water No. 1	

ON DECEMBER 16, 1943, at the request of the Fayette County Health Department, two industrial hygiene engineers of the Bureau of Industrial Hygiene, State Department of Health of Kentucky, MR. W. W. STALKER and MR. MORGAN B. LEWMAN, visited the plant at Lexington, Kentucky, for the purpose of taking samples of atmosphere of the working environment for a suspected contamination with carbon tetrachloride and to obtain a sample of the spotting solution used in the cleaning of parachutes which was the alleged cause of this contamination.

The instrument used in sampling was the halogenated hydrocarbon indicator. The first sample of 30 liters taken at 3:40 P.M. at the inspection and spotting operation was from the general atmosphere 20 feet from the front wall, between the first and second vertical rows of inspection tables. Analysis in the laboratory of this sample showed 163.6 parts per million carbon tetrachloride. The second sample was 30 liters taken at 4:15 in the same operation between the second and third table in the center of the room between two operators was faulty in technique, as the bottles of cleaner had been closed previous to the sampling, and, inasmuch as this did not report a true picture of the working environment during operation, the sample was not analyzed. However, another sample of 44 liters taken at 5:30 P.M. at the same location as the second

AN *Effective* BARRIER

Competent clinical investigation has established the effectiveness of a properly fitted occlusive diaphragm. Attention, however, should be directed to the need of not only providing for the protection but also the comfort of the patient, in order to assure continued use of the diaphragm.

Examination of the "RAMSES"* Flexible Cushioned Diaphragm reveals that:

1. The dome is made of velvet-soft pure gum rubber. It will not induce irritation.
2. The patented rim construction provides a rubber cushion which inhibits discomfort from spring pressure and provides a broad unindented surface for contact with the vaginal walls.
3. The coil spring used in the rim is flexible in all planes permitting adjustment to muscular action.

A carefully controlled manufacturing process builds lasting qualities into the "RAMSES" Flexible Cushioned Diaphragm. With proper care it will give long service.

"RAMSES" Flexible Cushioned Diaphragms are available in sizes from 50 to 95 millimeters in gradations of 5 millimeters. They are carried in stock by all reliable pharmacies.

Complete professional information will be sent to physicians on request.

Ramses FLEXIBLE CUSHIONED DIAPHRAGM

*The word "RAMSES" is the registered trademark of Julius Schmid, Inc.

Gynecological Division
JULIUS SCHMID, INC.
Established 1883
423 WEST 55th STREET NEW YORK 19, N. Y.

Only the "RAMSES" has the patented rubber-cushioned rim.

sample and taken under the exact operating conditions showed a concentration of 193.5 parts per million carbon tetrachloride.

The maximum allowable concentration as defined by the State Department of Health of Kentucky is 100 parts per million carbon tetrachloride.

Sample of the spotting solvent on chemical analysis proved to be 99+% carbon tetrachloride, which proves that the solvent is not "Carbona" as was alleged by some operators in the plant, inasmuch as "carbona" is a solvent containing 40% carbon tetrachloride and 60% benzol.

Urine samples were secured from 15 ill workers. Of these, two were acutely ill. The urinalysis of one of the acutely ill individuals revealed albumin 4 plus and hyaline casts. The other 14 urine samples were negative for albumin and casts.

Sixteen blood specimens were drawn from as many ill individuals. The normal calcium content of blood serum has a range of 9 to 12 milligrams per 100 cc. of serum. Carbon tetrachloride poisoning often results in a variance of the calcium content, but not always. Positive alteration of these figures, however, must be considered as additional evidence of carbon tetrachloride poisoning. Of the 16 blood samples, eight were definitely below the normal range.

It is obviously necessary to exercise engineering control over this proved toxic concentration of carbon tetrachloride in the working atmosphere of this plant. Three methods of control present themselves for consideration and are here presented numerically in the order of their value.

1. By far the best control would be the substitution of some other solvent for carbon tetrachloride. One of the naptha series would be best because of its considerably lower toxic properties. It is our understanding that the plant is not allowed to use a sovent which has fire and explosive properties. However, this plant has admittedly been using Carbona, which has a 60% benzol content. The minimum explosion concentration of benzol is 1.4%, and, after the more readily volatile carbon tetrachloride content of carbona had evaporated, the atmosphere and materials must have exceeded this concentration of benzol. Naptha also has 1.4% minimum explosion point, no more than the benzol formerly used.

2. Exhaust ventilation of the work tables on which the spot cleaning is done, down-draft through lattice opening of the work table surfaces, and removal of the fumes outside of the working environment. This is admittedly difficult because of the fact that no basement or sub-cellar under this part of the building has been provided, but it still remains as the second best solution to the problem.

3. Exhaust ventilation of the entire work room atmosphere through floor level vents and utilizing sufficient fan power to insure a complete change of the work room atmosphere four times per hour.

Conclusions

THE outbreak of illness involving 137 war workers herein considered is due to acute carbon tetrachloride poisoning.

2. Hundreds of other workers who have not been acutely ill are suffering from chronic, or sub-clinical carbon tetrachloride poisoning.

3. The symptoms of this illness, namely, nausea, abdominal pain, vomiting, weakness, coughs, "colds," headaches, etc., constitute the classical symptoms of carbon tetrachloride poisoning in various stages from the acute to the chronic condition.

4. Efforts to conserve fuel in this plant which further impair ventilation will aggravate the seriousness of the condition.

5. Since carbon tetrachloride gas is 5.3 times as heavy as air, vents must be provided at floor level and the gas must be evacuated by an adequate number of motor driven fans, forcing the gas-laden air out through such vents.

6. Other non-toxic solvents should replace carbon tetrachloride if possible.

7. The use of carbon tetrachloride should be limited to the unavoidable minimum. Any possible unnecessary soiling of nylon should be carefully avoided.

8. Individual containers for carbon tetrachloride should be provided which automatically close when not actually dispensing the solvent. Such containers would also tend to prevent accidental spilling should they be dropped or overturned.

9. Persons who are unavoidably exposed to carbon tetrachloride gas should:

(a) Drink a quart of milk a day to increase their blood calcium level.

(b) Avoid greasy foods.

(c) Avoid the use of oily laxatives.

(d) Whenever possible, rotate work to avoid prolonged exposure to carbon tetrachloride.

(e) Avoid the use of alcoholic beverages.

More on the Women Problem

SOME of the more specific points disclosed by the study on "Health Problems of Women in Industry," reviewed by DR. BURNELL (page 143), together with suggestions for improvement in certain particulars, may be summarized as follows:

Manufacturing methods will continue to improve with the increased employment of women, especially with regard to protection against potentially hazardous exposures ordinarily resulting in sickness and accidents of industrial type.

Better industrial eyesight programs will result, as women are often given jobs of inspection, precision work, color identification, etc.

Case-finding procedures regarding pulmonary tuberculosis should be given added incentive, owing to the higher incidence of this disease in younger women.

The specific physiological problems of women (menstruation, pregnancy and the menopause) do not appear to be a cause for much concern, except as represented by the phase of social adjustment. Unless excellent supervision can be provided, supplemented by appropriate professional consulting services, it is believed that it is inadvisable at present to allow the pregnant woman to continue at work, contingent of course, upon circumstances in individual cases.

Women are a little harder to deal with than men in a medical sense—they have more problems and more unexplained symptoms, and they present more requests for transfers; "we have a great deal of difficulty with married women with young children, who consistently request transfers and also want the same shift as the husband."

The more extensive use of women counselors, women physicians, and women safety directors is suggested, for it seems obvious that women employees will more readily unburden their personal difficulties to professional women in these phases of industrial life.

But it is believed that women have made for themselves a permanent place in industry and it appears that industrial personnel whose responsibility it is to work with women applicants and employees, will do well to continue to minimize the difficulties of their absorption into industry.

PREVENT TIME LOSS

Protect their hands against oils, grime and paint

Supply your workers with Du Pont PRO-TEK, the hand cream that acts like an invisible glove. Quickly applied to hands and arms before starting work, it guards the skin against paint, grime, insoluble cutting oils and non-aqueous solvents (but should not be used against compounds which enter the circulation through the skin). Easily washed off with water when the job is done and takes all the grime with it. Costs little . . . a sound investment in employee goodwill. Write for Free Sample.

AVAILABLE without priority. Ask your jobber about the economical gallon jar . . . or the convenient 8-oz. size. E. I. du Pont de Nemours & Co. (Inc.), Dept. IM-1, Wilmington 98, Delaware.

DU PONT PRO-TEK
REG. U. S. PAT. OFF.
HAND PROTECTIVE CREAM

INDUSTRIAL HEALTH and DISEASE

The General Motors Medical Program for Health and Safety

C. D. SELBY, M.D., F.A.C.S.,
GM Medical Consultant

THE MEDICAL activities of General Motors began many years ago, in the treatment of occupational injuries. From this limited beginning the present health maintenance program has evolved.

The medical staff consists of 127 physicians (72 full-time and 55 part-time), 528 registered women nurses, 157 technicians, technical aides and laboratory personnel and 100 clerks. The medical personnel of 912 persons include medical departments in the New York and Detroit offices and in each of the manufacturing divisions.

Once a year the medical directors meet in one of the plant cities for the study of new medical developments and their application to the General Motors industrial health practices. A feature of these meetings is a trip through one or more of the local plants for close observation of practical methods. The annual GM Medical Conference has become a recognized institution attended regularly by doctors from various interested government services and other industries.

In developing the program the doctors have been careful to keep within practical limits, consistent with the principal purpose of GM which, obviously, is not the practice of medicine. They have conformed with the legal requirements relating to the health of the employees and the prevention, care of and compensation for occupational diseases and injuries. And they recognize the rights of employees in the free choice of physicians for the care of sicknesses and injuries not legally related to occupation. They do not furnish medical and surgical treatments for these unless they are minor ailments and medical emergencies which occur during work, which is recognized as an ethical industrial practice.

From General Motors' *Folks*, Detroit, January.

Industrial Hygiene

THE physician is regarded as the health officer of the plant. He knows the toxic materials used in manufacturing and the processes which have harmful though non-toxic features, and he acts as a guide in protecting employees. He does this through periodic plant inspections, including on his rounds the sanitary facilities and cafeterias, as well as the manufacturing areas. Usually he finds that potentially harmful conditions are controlled. But if he is not sure, he seeks the assistance of an industrial hygiene engineer. If one is not available in his own department or in the plant he requests the services of the Central Office industrial hygienist or those of the state bureaus of industrial hygiene.

Some of the doctors have their own industrial hygiene laboratories; others have arranged with plant chemists and a few with trained nurses and other medical department assistants to make routine investigations. Three of the doctors have obtained support for their industrial hygiene activities through a health committee which consists of the physician and others who are concerned—the chemist, the safety engineer and the maintenance or process engineer.

Health Preservation

THIS work in industrial hygiene has been helpful in controlling occupational diseases. During the first six months of 1943, the severity rate of these diseases was .005 of a day per 1000 man hours worked, despite the new and varied problems which arose out of the changeover. If this lost time were divided equally among all of the employees it would amount to about half of the time it takes to smoke one regular size popular cigarette.

As a further check against occupational diseases, and to assist GM Folks in preserving their health, GM provides physical examinations, personal consultations and health instruction.

Examinations

EXAMINATIONS are necessary to the maintenance of health and while the doctors are not restricted in the number they give any one employee, experience has shown that the following schedule is practical and effective.

Before Employment

PREPLACEMENT examinations are given to prospective employees in order that they may have occupations which are suitable to their health and physical conditions. The objective, of course, is safe productive employment. These examinations also furnish the doctor the information he needs for his later efforts in behalf of health, continuous safety in work, and the fair adjustment of claims for compensation. They include urinalyses, blood pressure readings, x-rays of the chest, serologic tests and other tests or special examinations if the doctor thinks they are necessary.

On Transfer

MANY physically substandard and handicapped people are being employed, and given work they can do. As a means of their further protection they are not to be transferred to jobs which vary essentially in nature and physical requirements from those of original placement without approval of the medical department. If transfer becomes necessary the doctor looks up the record and makes a supplemental examination if he thinks it is necessary to safe performance in the new work.

On Re-Entrance

THE DOCTORS have observed that absences for sickness or injury, and other reasons, if prolonged, may be associated with changes in physical condition and health. So returning employees clear through the medical department and the doctor examines them to the extent he thinks is necessary. These re-entrance examinations are for the protection of employees who return too soon after sickness and injury, or who wish to resume work for which they may have become unfitted in their absence. They result in a gradual accumulation of handi-

PREVENTION
USE
ALKALOL
—to prevent tired eyes
—to prevent nasal passages from becoming clogged.
—to prevent irritation of delicate membranes and tissues.
ALKALOL is bland, soothing, always safe to use.
Since 1896
THE ALKALOL COMPANY
TAUNTON MASS.
ALKALOL
ALKALINE · SALINE · CLEANSING
WRITE FOR FREE SAMPLE

Mountains of mail from great war plants testify to the amazing efficiency of Lan-O-Kleen in helping to combat dermatitis—scourge of production. Tested in the fire of war-time necessity, Lan-O-Kleen has sprung to top place in many of our greatest war plants. Make this Success Story your own Success Story by equipping your washrooms with Lan-O-Kleen—the soap that cleanses *mildly* but *effectively*.

LAN-O-KLEEN* is the first industrial hand soap to provide a full measure of the double action of *effective cleansing* and proper *super-fatting* with soothing, protecting lanolin.

It removes 95% of all soils encountered in industry without injuring the skin and leaves hands feeling better, more ready for work and thus *helps prevent most occupational dermatitis*.

Lan-O-Kleen is a powdered soap of *mildly* alkaline reaction compounded with granular corn-meal which has been impregnated (by an exclusive process) with anhydrous lanolin. In its use, the lanolin in Lan-O-Kleen buffers the alkaline reaction of the soap, protecting the natural oil film of the skin and leaving the hands ready for top-speed war production.

*Reg. U. S. Pat. Off.

• *Send for your free copy of this booklet.*

WEST DISINFECTING Company

42-16 WEST STREET · LONG ISLAND CITY 1 · N.Y.

CLIP TO YOUR BUSINESS LETTERHEAD, PLEASE

West Disinfecting Company, Dept. 1M, 42-16 West St., Long Island City 1, New York.

Please send me further information on ☐ Lan-O-Kleen. ☐ Lan-O-Kleen booklet.

Name..... Title.....

Thousands OF CHEST X-RAYS
...in half the number of minutes
● WITHOUT SACRIFICE OF DIAGNOSTIC QUALITY, full size 14" x 17" radiographs, at the remarkable speed of 150 per hour, are normal production accomplishments of the Paper Roll Method, pioneered by POWERS RAPID CHEST X-RAY SERVICE. This widely endorsed method for large group examinations affords the optimum in accuracy, time-saving convenience and economy.
HERE ARE THE FACTS
Low cost protection—One price, based upon the total number of persons radiographed within a determinable period, covers the cost of this important service. Included are the services of our own experienced operators and portable, shock-proof equipment.
Minimum production loss—Each subject need be away from his duties for only 10 minutes or less to have an exposure made that provides a permanent record, individually identified for file reference.
There is no obligation—Write for comprehensive data and request our qualified representative to call. We will gladly prepare an estimate for the considerate action of your Board.
POWERS X-RAY GLEN COVE N.Y. SERVICE
POWERS X-RAY SERVICE
Glen Cove New York

capped employees who are followed up occasionally by interviews or examinations until they become seasoned to their changed conditions or are fully restored. This is a rehabilitation measure.

On Hazardous Occupations

THROUGH the use of industrial hygiene engineering methods and the installation of exhaust ventilation, etc., occupational diseases are effectively prevented, but, nevertheless, an occupational case does occur occasionally. For example, under war conditions dermatitis has increased. So employees who are exposed to sources of occupational disease are examined periodically as often as the doctor thinks necessary to secure the required additional protection. These occupational examinations, as they are called, are usually limited or special examinations depending upon the nature of the exposures. There is no attempt to conceal occupational hazards from employees. On the contrary, they are told about them—the nature of the exposure, the protective equipment installed or furnished for their personal use and the best way to use the equipment.

For Counsel

THE advice of the plant physician is often sought by those who are worried by personal sickness and even sickness in their families, and the doctor may be asked to treat conditions that do not fall within the scope of General Motors medical activities. Regardless of his wish to accommodate, he must draw a sharp line on these cases, so that his entire time is devoted to his usefulness as the plant physician. However, his counsel is sought and he desires to give advice. To do this satisfactorily it may be necessary for him to make an examination. In such cases he proceeds as any physician does in making a diagnosis, using such special tests and facilities as he has at hand. Much of the medical director's time is occupied by personal consultations of this general character and their popularity indicates that they are considered helpful.

At Least Once a Year

BY TAKING advantage of the opportunities afforded by these various examinations the plant physician examines from 70 to 80% of the employees each year. As there is no good reason why the others should be deprived of the benefits of health supervision, they are invited in for what is called an annual examination. In this group are elderly employees and others who have physical handicaps which they fear may disqualify them for work.

As the purpose of all examinations is to maintain health and assure safe employment, the importance of the annual check-up may be readily apparent.

Treatments

IN General Motors, as in most industries, treatments are limited to the care of occupational injuries and diseases, the temporary care of minor personal ailments and first aid in non-occupational medical emergencies occurring during the work hours, such as acute appendicitis, perforated ulcer of the stomach, heart attack, etc. The doctor handles these conditions according to his judgment, practicing conventional medicine and surgery and calling in consultants or family doctors as needed. There are no therapeutic standards. For example: A study was made of minor burns, some 5000 of them, none of them disabling. It showed that more than 80 different remedies had been used and results were much the same. All burns were healed in some four or five days. In the treatment of minor ailments and medical emergencies, the plant physician does not encroach upon the rights of physicians in private practice.

Rehabilitation

THE economic restoration of employees who have received occupational injuries or had occupational diseases is a routine procedure in General Motors. Naturally the plant doctors are the first to handle these cases and they plan their treatments with the best possible physical restoration as their objectives. When the best is accomplished, or earlier if advisable, the injured employees are re-

manpower

from women

WAR INDUSTRY requires a colossal supply of manpower. By this year's end more than one-third of it will be provided by some five million women.

Doing men's work, they will need the stamina of men to perform vital tasks with sustained efficiency. Moreover, the war will demand the best efforts of millions of women engaged in farm, household and home defense work.

'Riona' Capsules can improve the efficiency of female workers by combating the physiologic "slow-down" periodically experienced by most normal women between the ages of fourteen and forty-five. 'Riona' Capsules contain 'Propadrine' hydrochloride, ¾ gr., acetophenetidin, 2 gr., and aspirin, 3 gr. In the treatment of dysmenorrhea, the analgesic effect of aspirin and acetophenetidin is aided by the antispasmodic action of 'Propadrine' hydrochloride on the myometrium.

• • •

'Riona' Capsules are also indicated for the symptomatic relief of headache, neuralgia, rhinitis and malaise associated with hay fever or the common cold. 'Riona' Capsules, individually wrapped in cellophane, are supplied in boxes of 30 and 100. **Sharp & Dohme, Philadelphia 1, Pa.**

'RIONA' *Capsules*

turned to work—perhaps to their former occupations, perhaps temporarily or permanently to others, depending upon the results. It is the doctor's duty to see that handicapped employees are suitably and safely placed and to follow them through until they become seasoned and as productive as they can be.

The annual number of these cases is not large in any one division, and in some of them there may be none at all. A FAR MORE IMPORTANT SOURCE OF HANDICAPS IS IN THE NON-OCCUPATIONAL DISABILITIES, THE INJURIES FOLKS RECEIVE OUTSIDE OF THE PLANTS and the sicknesses that all people have. In so far as practicable, these also are economically restored under the guidance of the plant physicians and with the cooperation of the personal attending physicians.

Since industry began to feel the effect of the war the manpower shortages have brought sub-standard and handicapped people into the plants in ever increasing numbers, and now that General Motors employees serving in the military forces are beginning to return, rehabilitation has become a very important function of the medical departments.

Public Health

IN THE interest of public health, and industrial health, the physicians of General Motors have adopted certain measures for cooperation with the health authorities in the control of tuberculosis, syphilis and the other communicable diseases. These measures relate chiefly to the early recognition of the communicable diseases and the reporting of cases to the proper authorities.

For case-finding in tuberculosis, x-rays of the chest have proved to be most simple and effective—for syphilis, serological tests. These are routinely made as a part of the physical examinations. The work in tuberculosis and syphilis has been especially effective and gratifying. The disability rates from them are very low.

Pre-natal Care

NOW that substantial numbers of women are employed the doctors are cooperating in the pre-natal care of those who become pregnant and their re-employment after confinement. Generally speaking these are permitted to continue on their jobs as long as the doctors think they can safely remain and they are readmitted as soon as they are physically able, the care of the child permitting.

The scope of the General Motors medical program may be summarized in this way:

It protects General Motors folks against possible sources of disease in the plants, gives them reasonable assurance of safe placement, supervision of their health in relation to employment and treats conditions that result from occupation and rehabilitation.

It gives the plant physicians the opportunity to cooperate with the general medical profession and the official departments of health in their respective efforts to treat and reduce general sickness. In the medical departments of General Motors industrial medicine, general practice and public health are complemental. To conserve human values is their common purpose.

Aviation Physical Examinations

ROSS A. McFARLAND, Ph.D.,
Assistant Professor of Industrial Research,
Harvard University Graduate School of Business Administration

MEDICAL supervision of a worker begins before his employment, i.e., at the time of the original physical examination. The items to be included in the examination depend upon the position being filled. In the case of airline pilots it must be very thorough. The investment involved in their training is great. The judgment which they develop from many hours of flying experience is a valuable asset. It is important, therefore, to select men whose physical and mental fitness are without question.

The physical examination given to a prospective employee should really be considered as a placement examination. It should be coordinated with the tests administered by the industrial psychologist to ascertain mental ability and specialized traits. These tests have proved to be of great value in eliminating the poorest applicants for a specific job, or in deciding which applicants to select from a larger group for further consideration. The physical examination should thus be an integral part of the adjustment of the individual to the job, with consideration given not only to the individual's accident proneness, but also to his ability to meet the physical requirements of the job.

Examining physicians should have a thorough knowledge of all of the jobs in the plant. Each concern should compile a list of occupations with appropriate descriptions of the type of work, classification of hazards, and statements of the physical ability required by the job. In the present war emergency, it is necessary to salvage not only material resources but human resources as well. The physician can assist with this salvage process by classifying the employee for limited or unlimited service. Applicants with advanced heart disease or tuberculosis or other illnesses where the prognosis is apt to be poor, however, should be eliminated, since they are accident risks and the company might easily become involved in indemnity cases. Each worker who is hired should be followed up by the medical department after his employment.

AN INTERESTING illustration of current practices in selection may be found at the Lockheed Aircraft Corporation in Burbank, California. The medical department, under the direction of DR. F. E. POOLE, in cooperation with the foreman of one of the larger plants determined that approximately 25% of the jobs could, if necessary, be filled with individuals having such physical limitations as blindness in one eye, total blindness, deafness, deaf-mutism, limited use of one extremity, loss of several fingers of one hand, loss of one hand, loss of one arm, loss of one leg, loss of both legs, or hernia adequately supported. In many industries today, workers with such handicaps have been employed and are doing excellent work.

From "A Medical Program for Aviation," a 20,000 word study by DR. McFARLAND, in *Harvard Business Review*, Autumn Number, 1943. This study has the following sub-divisions:

The Medical Program in the Pan American Airways System.
Physical Examinations in the Selection of Personnel. (Published here.)
Maintaining Fitness in Flight Crews:
- Predeparture Examinations.
- The Effects of High Altitudes.
- Importance of Diet to the Pilot.
- Alcohol and the Airman.
- The Effects of Smoking.
- The Value of Routine Exercise.
- Fatigue in Pilots.
- Study of Fatigue in Trans-Pacific Airmen.

Medical Supervision of Foreign Service:
- Pan American Airways—Africa.

Medical Program for Ground Personnel in Shops and Hangars.
Improvements in the Manufacturing of Aircraft:
- High Altitude Fighting in Africa.
- Improvements in Air Transport Planes.

COOPER CREME
No Finer Name in Contraceptives
WHITTAKER LABORATORIES, INC. NEW YORK, N. Y.

# of CERVICITIS

TODAY, control and eradication of cervical inflammation is more important than ever . . . for womanpower is vitally a part of our national picture.

Despite the efforts of physicians, in and out of industry, to keep all women physically fit, cervicitis continues to contribute to absenteeism, both from industry and from auxiliary duty with our armed services.

Osmopak is being increasingly employed as a single agent in Cervicitis. It is a concentrated hypertonic force to tissue fluids and when applied to the inflammed cervix, a strong osmotic pressure develops which depletes the edema, localizes the infection and controls local reinfection. No maceration of tissue was ever found—a course of depletion resulting in improved circulatory conditions.

OSMOPAK

Reg. U. S. Pat. Off.

A soft gel of colloidal magnesium sulfate, brilliant green and benzocaine

SUPPLY: 1½ LB. JARS

IRWIN, NEISLER & CO.

Pharmaceutical Manufacturers Since 1886

DECATUR ILLINOIS

Today, selection is important not only for manufacturing personnel but also for executives. Recently, one of the vice-presidents of an air transportation company employed six young men to be trained for executive positions without giving them physical examinations. They were attractive in personality and had advanced training in business administration. Their draft classification was 4-F. After they had been routed through several departments in the company for special training, they were transferred to a locality where they were required to take physical examinations.

The results were very striking.

One man had diabetes; a second, epilepsy; and a third, advanced hypertension, or high blood pressure. The illness of the third man became complicated by uremia; he died three weeks later.

The other three were found to be normal, in so far as employment in the company was concerned. Their disqualification from the Army had been based on physical stigmata which had no influence on their health and longevity or their effectiveness as executives.

Physical examinations at the time of original employment would have saved the company the embarrassment of dealing with the first three cases; furthermore, circumstances might have developed in which the company would have suffered severely from this lack of foresight.

This illustration could be repeated many times over throughout the United States in recent months.

An interesting illustration of the need for thorough physical examinations on the part of air transportation companies can be found in a study reported by the Civil Aeronautics Administration.[1] An analysis was made of the CAA's medical records of pilots who had been examined (for renewal of a license) by more than one physician over a period of 10 years. The cases studied represented 18,400 pilots who had defects recorded at any one of the 10 examinations. Many discrepancies were found in examinations of the same pilot by different examiners, which could not be caused by changes in the physical condition of the pilot.[2] The usual order of the disagreement was that the first physician found the defect and the following examination cleared the pilot. Obviously there was a wide range in the care with which the physicians conducted examinations, as well as in the emphases which were placed upon various defects. Interestingly enough, the study revealed no relationship between accidents and physical defects noted in the standard medical examination.

One cannot conclude from this, however, that physical defects are not contributing or even major causes of accidents; one can conclude that an operating airline would be taking a chance in relying upon such examinations either as a means for the early detection of unfitness or as an adequate basis for grounding a pilot. Not only must physical examinations be more closely supervised, but unreliable tests must be eliminated and new tests developed.

The medical tests which have been given to pilots in the past have not been carefully selected to detect the early stages of disease or to meet specifically the physiological problems encountered in flying. A detailed study of the tasks required of a pilot is needed. Use must be made of the many tests developed in modern medicine. After the medical examinations are given, each pilot should be informed about the vulnerable points in this physiological and psychological make-up in order to help him prolong his useful life. The significant point with pilots, or with any group of individuals, is that there may be borderline abnormalities which can be corrected. If the judgment and experience of such personnel are to be retained, any physiological or psychological deterioration must be checked in the early stages. Actually, if illness is detected early, older pilots may gain from five to 10 years of active flying service.

SOME of the more important items in the medical examination are as follows: (1) a chest x-ray to detect the early development of tuberculosis or other abnormalities of the lungs and the size of the heart; (2) an electrocardiogram for anomalies in the function of the heart; (3) analysis of the blood (red cell count and hemoglobin) to determine defects in the body's oxygen transport system; (4) a basal metabolism test for defects in the utilization of oxygen and in the characteristics of breathing, and also defects of the thyroid gland; (5) stool examination for amoebae and parasites as well as for occult blood (only when indicated); (6) special studies of the eyes to detect defects in night vision and abnormalities due to improper diet; this implies that a test for dark adaptation should be given as well as a microscopic examination of the eyes with a slit lamp; and (7) a physical fitness test, more reliable than the Schneider Index now widely used in aviation.

In order to illustrate the value of such tests, the following cases are cited from the results of one of the annual examinations of pilots in Pan American Airways:

1. Three pilots were found to have mild cases of tuberculosis which would not have been detected without chest x-ray films. Two were under 30 years, and one over 40 years of age. All three of these cases have been successfully treated, and the pilots are back on active flight duty.

2. Two pilots were observed to have mild cases of diabetes, and two others to have diabetic tendencies. The four men were placed under the care of a specialist, who helped them to control the disorder by diet. They are now free of the symptoms and have returned to flight duty.

3. Three pilots were found to have abnormal electrocardiograms. By losing weight, resorting to regular exercise, and giving up smoking, their circulatory reactions have become more normal, and the prospects of their being grounded for cardiac defects are no longer great. One of the chief values of annual electrocardiograms, especially with pilots over 35 years of age, is for comparative purposes at a later date, following accidents or combat duty.

4. Several pilots showed visual defects which might have been prevented by proper treatment previous to the appearance of the abnormality. In one of the older pilots, who had 20/70 vision and had been flying for six years on a waiver, a specialist determined that the defective eye was tubercular: it responded to treatment.

5. The most common ailments which appeared in the flight group (most of them preventable, or at least reducible in frequency, by proper medical care) were: (a) upper respiratory infections, such as common colds and sinus trouble; (b) grippe and influenza; (c) digestive disturbances, such as gastric ulcers, spasms of the stomach, colitis, constipation and diarrhea, and various forms of dysentery and amoebic infections; (d) focal infections, especially of the teeth; (e) food poisoning; (f) infections of the tonsils and adenoids; (g) visual defects, such as astigmatism and abnormalities of the ocular muscles; and (h) abnormalities of the urinary system.

IN INITIATING a program of this nature, it is very important for the management to take the employees into its confidence about the objectives and the benefits to be derived. When rumors of the medical program were first heard in Pan American Airways, some of the pilots, especially the older ones, believed that it was only a high-handed procedure devised to ground them and make way for younger pilots. They soon discovered, however, that the opposite was the case, and that the management was concerned with protecting them and prolonging their useful lives as pilots, in order to obtain the benefit of their flying experiences and knowledge of aviation as long as possible. They also realized that they were obtaining, free of charge, up-to-date medical examinations. The program has proved to be successful in building up the confidence and morale not only of pilots but of all employees.

References

1. FRANZEN, RAYMOND, and BRIMBALL, DEAN R.: Problems of Consistency Arising from C.A.A. Medical Examinations, (Civil Aeronautics Administration, Department of Commerce, Washington, D. C., February 17, 1942).

2. For example: ". . . one of the physicians cleared 58% in respect to all defects, whereas one cleared none at all."